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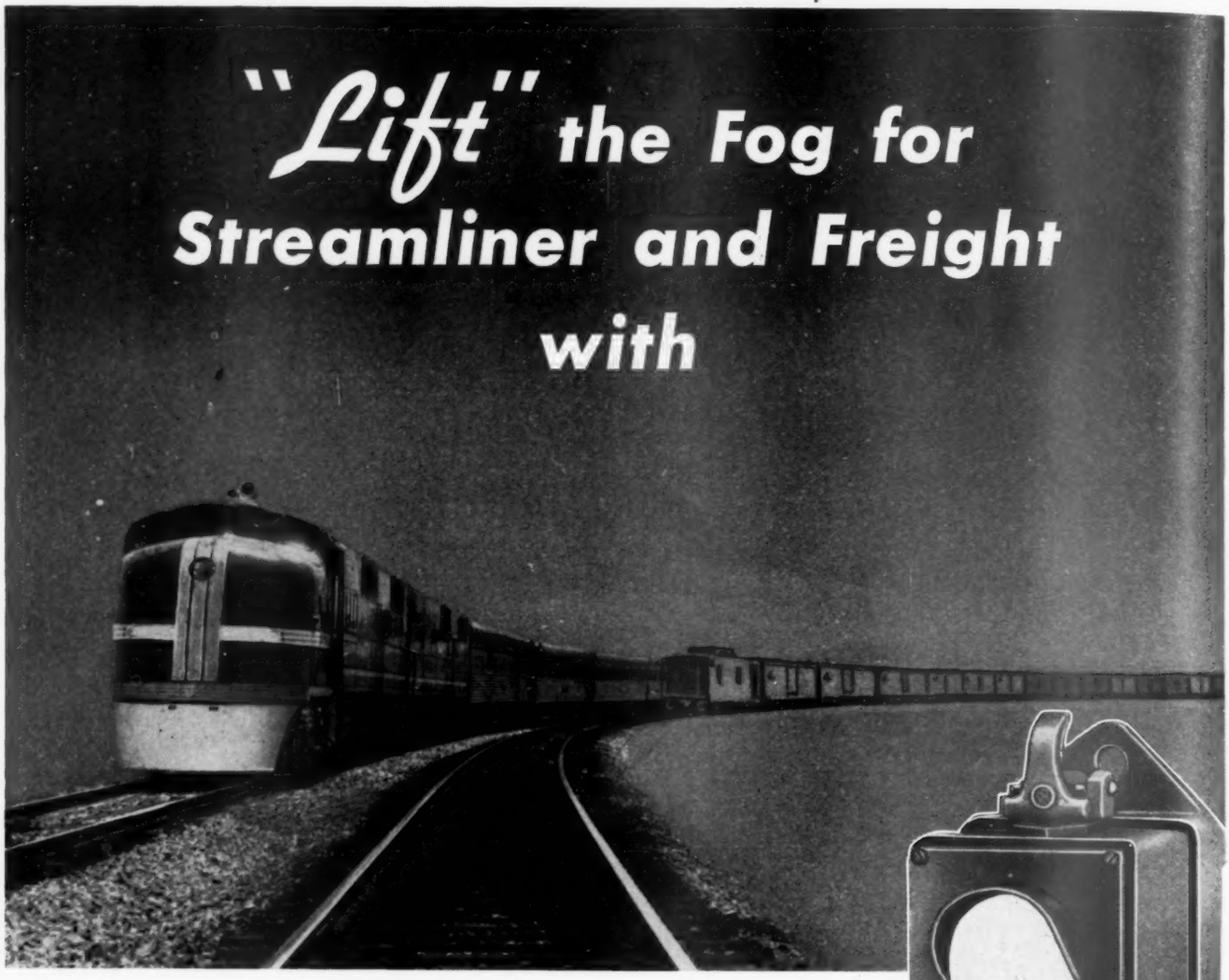

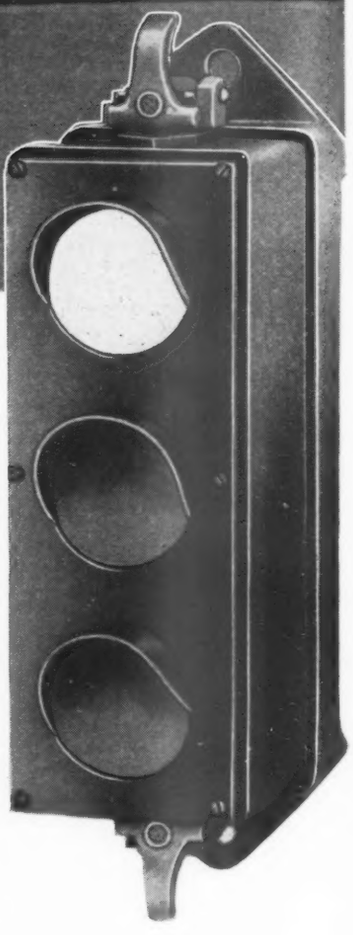

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RAILWAY AGE

What the "Fact Finding" Board Found

President Roosevelt's appointment of the emergency fact-finding board, and its report regarding the railway wage controversy, were a typical New Deal performance. The President publicly announced before he appointed the board that, in his opinion, railway wages should not be reduced. He appointed as its chairman Judge Stacy of North Carolina who has been reported to be a candidate for the Supreme Court of the United States. With the President's reputation for purging all who disagree with him, it seemed quite likely that a candidate for appointment to the Supreme Court would agree with him. The position in the New Deal of James M. Landis, another member of the board, is indicated by the fact that Mr. Roosevelt had previously appointed him to the Federal Trade Commission, and later to the Securities and Exchange Commission. Dr. Harry A. Millis, the third member of the board, had previously served by Mr. Roosevelt's appointment as a member of the notorious National Labor Relations Board. What was to be expected of such a board excepting that it would report to the President that he was right—that railway wages ought not to be reduced? Which, accordingly, it did.

The Board's Economic Philosophy

The economic and social preconceptions upon which the reasoning of the board was based are clearly indicated by certain statements appearing in its report. In one place it said, "The employees maintain that the proposal for a wage reduction . . . is contrary to the present *sound* national policy to maintain wage rates and to bring low wages up to a tolerable level." The use of the word "sound" was not necessary in stating the views of the employees, and therefore constituted an explicit expression of opinion by the board. How could a board which started with the premise that, regardless of economic conditions, it is "sound national policy" to maintain or increase wages in general, be expected to be convinced by any amount of evidence that it would be sound policy to reduce railway wages in particular? Elsewhere the board said: "Concern over the railroads is tripartite in character. To the interest of management and of the men must be added the interest of the public." Note the omission of any reference whatever to the concern and interest of railway security-owners. This is the purest New Deal economic doctrine. The fundamental and essential difference today between so-called "liberals" and "conservatives" is regarding the way in which investors and their capital should be treated as a matter of right, and must be treated as a means of promoting prosperity.

The two statements by the fact-finding board quoted above are quite sufficient to show the adherence of its members to the economic policies which for five years have prevented in this country the recovery that has occurred in almost every other industrial country in the world.

Should Rely on New Deal and Labor Leaders

"The board has had presented to it programs more or less specific," the report says, "for the relief of the railway industry. . . . The evidence before the board has impressed it with the necessity that now rests on government for a complete and thorough-going reconsideration of the relationship of the railroad industry to our national well-being. . . . Both co-operation and imagination can be expected to be forthcoming from railway labor as well as from the carriers. Whatever may be the disposition of this present proceeding, the existing willingness to work together for what is fully realized to be a common end dare not be lost by strife over a question essentially small in the light of the ultimate benefits that are bound to accrue from some better answer to the general railway problem." These references to "programs" emanating from government and labor union sources raise a question as to just how seriously proposals from these sources should be taken.

Governor Roosevelt made a speech at Salt Lake City

on September 17, 1932, in which he very intelligently analyzed the railroad problem and made constructive suggestions for its solution. There had begun just about three weeks before that date an increase of railway freight traffic which proved to be 17 per cent more than seasonal in the last one-third of 1932 and afforded the first evidence that the bottom of the depression had been passed. This increase of traffic was interrupted by the banking crisis in the first quarter of 1933, but resumed immediately afterward at an accelerated pace. Mr. Roosevelt and other New Dealers have represented, however, that the business of the country was in a condition of collapse when he became President on March 4, 1933; that the New Deal policies adopted were necessary to save the nation from ruin; and that under these policies there has been great improvement in economic conditions.

New Deal Has Reduced Railway Net Earnings 40 Per Cent

How much better—or worse—then, did the railroads do in the first nine months of 1938, after five and a half years of the New Deal, and under wages the fact-finding board found not too high, than in the first nine months of 1933? Their gross earnings showed an increase of $275,795,502, or 12 per cent; operating expenses an increase of $349,976,577, or 21 per cent; taxes, an increase of $55,992,385, or 28 per cent; net operating income, a *decline* of $136,384,138, or 40 per cent. Railway net operating income by months and quarters in the first nine months of 1933 and 1938 was as follows:

	1933	1938	Decrease Per cent
January	$13,585,011	$6,919,888	...
February	10,133,779	Def. 2,122,095	...
March	10,805,518	14,470,444	...
First Quarter	34,524,308	19,268,237	44.2
April	19,351,463	9,236,817	...
May	41,042,629	16,496,701	...
June	59,831,292	25,000,803	...
Second Quarter	120,225,384	50,734,321	57.8
July	64,752,602	38,387,209	...
August	61,401,984	45,376,622	...
September	60,608,882	50,361,823	...
Third Quarter	186,763,468	134,125,654	28.2
Total nine months	341,513,160	204,128,212	39.9

It is somewhat shocking to find that the industry's net operating income in the first quarter of 1938 was 44 per cent smaller than in the first quarter of 1933 when the great banking crisis developed in the last days of the administration of President Hoover; that in the second quarter of 1938 it was 57.8 per cent smaller than in the second quarter of 1933 when the original New Deal legislation which "saved the nation" was being drafted and passed; that in the third quarter of 1938 it was 28 per cent smaller than in the third quarter of 1933; and that in the entire first nine months of 1938 it was 40 per cent smaller than in the first nine months of 1933. And the statistics given show plainly that this reduction of net operating income below its level when, according to New Dealers, the nation so sorely needed saving, has been due entirely to increases in operating expenses and taxes that have been caused by New Deal policies.

On the Record, Why Trust the Government?

In the face of this record, six years after Mr. Roosevelt's speech at Salt Lake City, and five and a half years after Mr. Roosevelt's ascendancy to power, when the railways are earning 40 per cent less net operating income than in the year in which, according to his version, he began saving an almost ruined country, railway management is told by a New Deal fact-finding board that it should not rely upon itself and exercise its legal power to make a reduction of wages, but should maintain wages and rely for salvation upon the Roosevelt administration. What industry has the Roosevelt administration ever actually helped? None whatever that we know of. Either because it is appallingly ignorant of economics, or because its economic policies are dictated by selfish political considerations, it has injured the industries it has tried to help almost as much as the industries it has tried to hurt. And the report of its fact-finding board regarding railway wages is simply another New Deal document which, like practically every other New Deal document, is inimical to recovery. The greatest and most important contribution the railways could make to recovery would be by increasing their buying from the manufacturing industry; and by reporting against a reduction of wages the fact-finding board has, in effect, opposed an increase of railway buying.

"Cooperation" by Labor Leaders to Be Relied on, Too

According to the fact-finding board, railway management need not rely merely upon co-operation by an administration under which the net operating income of the railroad industry has been reduced 40 per cent below the basement level of 1933. It should expect and rely also upon co-operation from "railway labor"—by which, no doubt, the board means the labor leaders who during the last five years have so ably helped the Roosevelt administration to reduce railway net operating income 40 per cent. The board cites ten policies for railway relief to which it says "the employees"—meaning certain labor leaders—pledge their support as a substitute for a reduction of wages.

This program raises important questions. Is it endorsed by A. F. Whitney, president of the Brotherhood of Railway Trainmen? Brother Whitney is not now a member of the Railway Labor Executives' Association, but for that very reason he has been the real leader of all the railway labor unions during the last year. By attacking Brother George M. Harrison and other labor leaders for not being tough enough he has forced them to act as tough as he has. Consequently, any plan of co-operation by management and labor leaders not formally and solemnly endorsed by

Mr. Whitney is valueless. Another question: Why does this program not include a pledge by the labor leaders to desist, at least for some short, definite period, from seeking legislation to increase railway operating expenses? A program of co-operation that does not contain that pledge is valueless. Another question: How does anybody know that if the railways abandon their movement for a reduction of wages the united efforts of the Roosevelt administration, of labor leaders and of railway managements will be sufficient to cause adoption by the Interstate Commerce Commission and Congress of the labor leaders' program for railway relief?

"Beware of Greeks Bearing Gifts"

And still another question: How does anybody know that if the railways abandon their movement for a wage reduction the Roosevelt administration and the labor leaders actually will co-operate with railway managements in behalf of a program for railway relief? Mr. Roosevelt has had five and one-half years in which to make good on his railroad speech at Salt Lake City, but instead has favored the policies which meantime have reduced railway net operating income 40 per cent. And the labor leaders have made a lot of fine promises of co-operation in the past, too, that they have not kept. They made such promises in 1937 before the wage advances of last year, and then promptly and strongly supported the train limit legislation they had indicated they would abandon. Because the railways started the movement for a reduction of wages the labor leaders defeated legislation in the last Congress that would have made it easier for the railways to maintain the wages. "Beware of Greeks who come bearing gifts," says an old proverb, which, literally interpreted, means, we take it, that you're a fool if you believe that those who have long done their best to ruin you have suddenly become obsessed with a desire to help you.

This issue of the *Railway Age* will go to press before the result is known of a meeting of the railway presidents held in Chicago on November 4 to consider whether the notices of a general wage reduction shall be withdrawn. If a decision to withdraw the notices already has been made, it simply affords another illustration of the fact that the greatest weakness of railway management in this country is its ineptitude and timidity in dealing with labor. If a decision has been reached not to withdraw the notices, it is an evidence that railway management is beginning to show increased intelligence and courage in dealing with labor. Completion of the process prescribed by the Railway Labor Act left railway management with a legal power of the utmost importance—namely, the legal power to make on December 1, 1938, a general reduction of 15 per cent in wages. If the Presidents acted wisely at their meeting in Chicago, they decided to retain this power and use it indefinitely in negotiations with the labor leaders, the Roosevelt administration and Congress for the purpose of making it certain that they will either get the 15 per cent reduction of wages or the equivalent thereof.

"The Existing Willingness to Work Together"—a Discovery

"Whatever may be the disposition of this present proceeding," said the fact-finding board, "the existing willingness (of management and labor leaders) to work together for what is fully realized to be a common end dare not be lost by strike over a question *essentially small in the light of the ultimate benefits that are bound to accrue from some better answer to the general railway problem.*" The writer of this editorial labors under the disadvantage of having spent more than thirty years in learning what little he knows about the railroad industry and its problems. The members of the President's fact-finding board had the advantage of having learned all they know about these matters within thirty days. Having learned so little in thirty years, the writer had not observed this beautiful and touching "existing willingness to work together," nor is he able to agree that the present strife is over a question "essentially small in the light of the ultimate benefits that are bound to accrue" from any answer whatever to the general railway problem—unless it is the answer of a large increase in railway traffic and gross earnings caused by a great improvement in general business.

What, then, do the Roosevelt administration and the labor leaders propose to do to cause this great improvement in general business? Not a thing. Almost every economic policy they have favored for five and one-half years, and almost every policy they favor now, has been and is now calculated to help prevent a large improvement in general business and a consequent large increase of railway traffic. Hence the present and prospective condition of business. This being the case, we hope the railway presidents have decided, or will decide, to retain their legal power to make a 15 per cent reduction of wages any time after November 30 until the Roosevelt administration and the labor leaders shall have shown exactly what kind of help, and how much, they are willing and able to give.

Railway management made the worst blunder in railway history, as every subsequent development has demonstrated, when it granted advances of wages in 1937 without, as it turned out, receiving any consideration whatever therefor. It is to be hoped railway management has not and will not make another equally indefensible blunder by precipitately withdrawing the notices of a wage reduction and leaving itself again, as it did last year, with no power whatever of effectively negotiating with government or labor leaders. The administration and the labor leaders have not shown such infallible reliability or such tearful confidence in railway management that railway management need fear hurting their feelings by showing it lacks complete and childlike confidence in them, and, therefore, prefers to retain any and every advantage that it can for use in trading with them.

Welded Box and Refrigerator Cars

Lightweight cars with all-welded underframes, ends, doors and roofs designed and built by the American Car and Foundry Company include many innovations

THE American Car and Foundry Company has recently built and tested new designs of 50-ton steel box car and 40-ton steel refrigerator car. Low-alloy high-tensile corrosion-resisting steel has been used to the fullest extent practicable in both types of cars, the thickness of plates and shapes being reduced to a minimum consistent with safety. The principal proportions and weights of these cars, as well as manufacturers' products used in their construction, are included in the accompanying tables.

New developments incorporated in the all-welded box car include steel ends with extra-long corrugations, steel doors designed for increased rigidity, and a new design of underframe having an all-welded striker integral with drop-forged front draft lugs, also all-welded combined bolster center filler and rear draft lugs. New developments in the refrigerator car, in addition to steel ends and striker as used on the box car, include the ice bunker, ice hatch, removable steel bulkhead, application of insulation, and a new method of using dry ice in combination with water ice. The bolster center filler in the refrigerator car is a special skeleton design of alloy cast steel. These two cars will be exhibited during the next three weeks as follows: November 15 and 16, New York at the Thirty-seventh street yards of the Pennsylvania; November 18, Philadelphia at the Broad street passenger station; November 21, Washington, D. C., at the Union Terminal; November 23, Pittsburgh, Pa., at the Baltimore & Ohio passenger station; November 25, Cleveland, Ohio, at the Union Terminal; November 28 and 29, Chicago, at the LaSalle street passenger station; and December 1 and 2, St. Louis, Mo., at the Union Terminal.

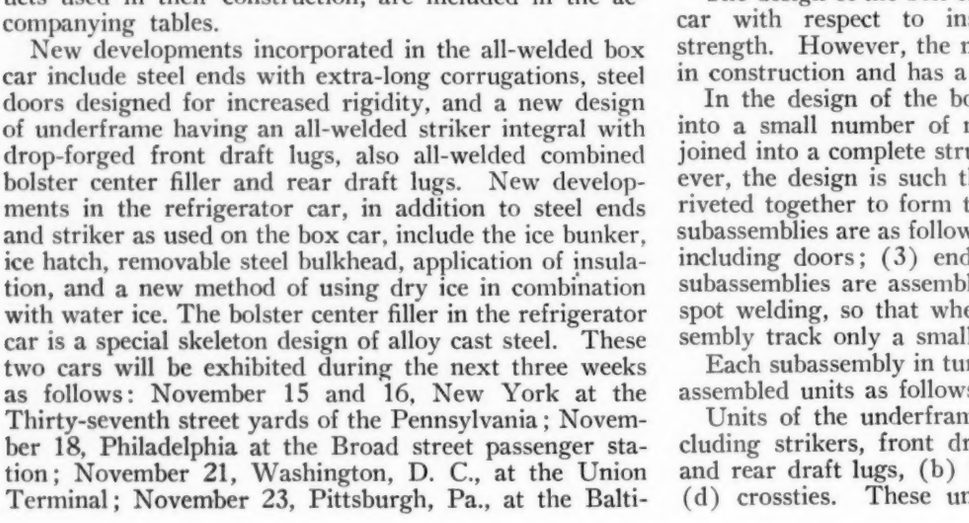
The 50-Ton Box Car

The design of the box car duplicates the 1937 A. A. R. car with respect to inside dimensions, and design strength. However, the new car includes many changes in construction and has a light weight of 37,500 lb.

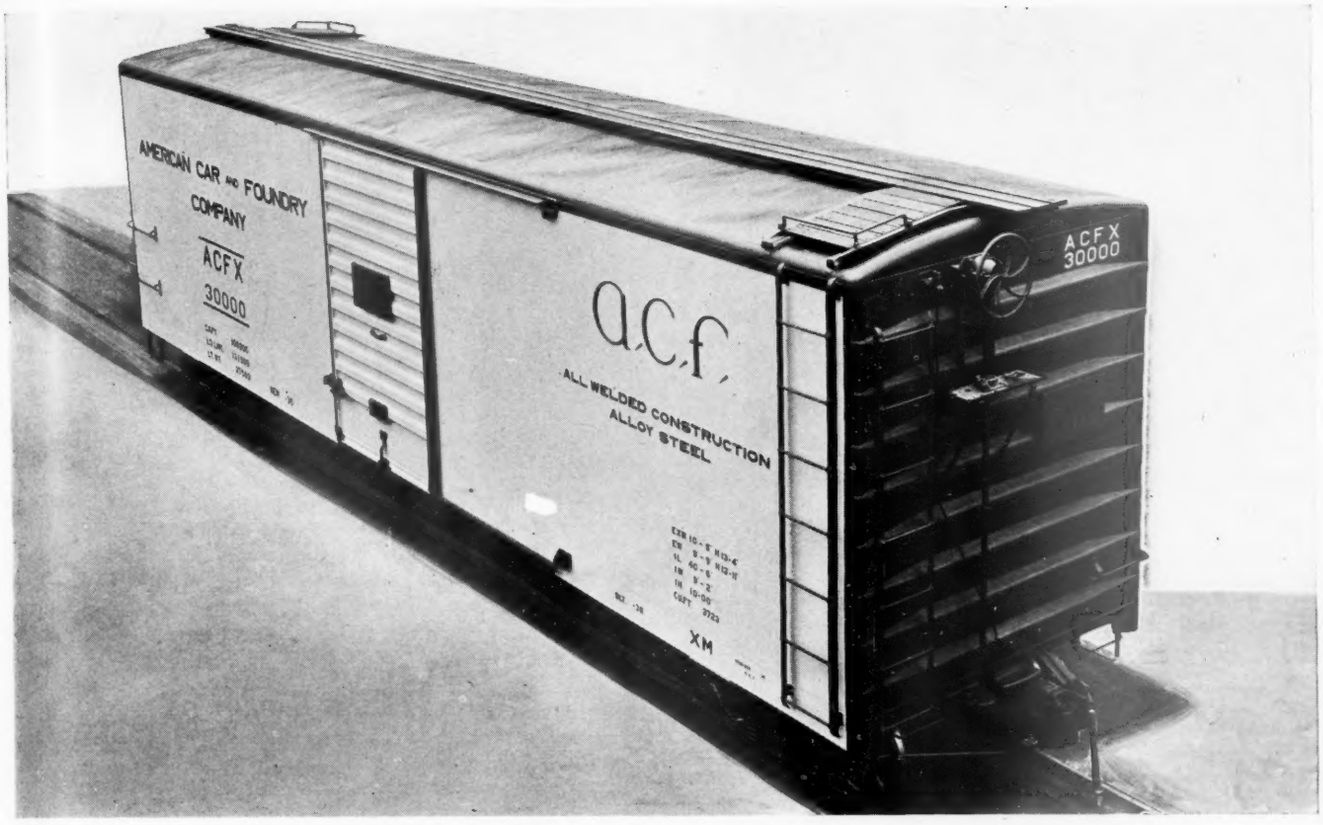
In the design of the box car the structure is divided into a small number of main subassemblies, which are joined into a complete structure by fusion welding; however, the design is such that these subassemblies can be riveted together to form the body if desired. The main subassemblies are as follows: (1) Underframe; (2) sides, including doors; (3) ends; and (4) roof. These four subassemblies are assembled on jigs by both fusion and spot welding, so that when brought together on the assembly track only a small amount of fitting is required.

Each subassembly in turn is made up of several smaller assembled units as follows:

Units of the underframe are (a) the center sills, including strikers, front draft lugs, bolster center fillers, and rear draft lugs, (b) bolsters, (c) crossbearers, and (d) crossties. These units are assembled on welding



Developments in the Refrigerator Car Include the Ice Bunker, Ice Hatch, Removable Steel Bulkhead, Application of Insulation and A New Method of Using Dry Ice in Combination With Water Ice



The American Car and Foundry Company Welded 50-Ton Box Car, Basic Features of Which Are Used in the Construction of the Refrigerator Car

jigs so as to insure accurate dimensions in the main subassemblies. The center-sill assembly is made up of two A. A. R. Z-section openhearth steel sills (Z-26), with the top flanges welded together from end to end. The cross-sectional area of the sill is 21.3 sq. in. The striker and coupler carrier, including the front draft lugs, are made up of drop forgings and rolled sections welded together and to the center sills.

The center-filler and rear-draft-lug unit is built up of low-alloy-steel H-beams and plates all welded together and to the center sills. The completed center-sill assembly includes separators and a few brake details welded in place.

The bolster is made up of two $\frac{5}{16}$-in. U-section pressed plates of low-alloy steel. The bottom of the U-section is the bottom of the bolster. The top member or top cover plate is a 19-in. by $\frac{5}{16}$-in. plate of low-alloy steel welded to the top edges of the U pressings and extending the full width of the car between the side sills. The conventional bottom cover plate is omitted and instead the drop-forged center plate extends outwardly, and is welded to the bottom of the body bolster and bottom flange of the center sills.

The bolster pressings are stiffened by braces of low-alloy steel above the side bearing. The side bearing is of high-carbon heat-treated steel riveted to a supporting plate welded to the bottom of the bolster. Pressed-angle stringer supports welded to the bolster complete the assembly.

Principal Proportions and Weights of the 50-Ton All-Welded Box Car

Length inside, ft. and in.	40-6
Length over striking castings, ft. and in.	41-8½
Truck centers, ft. and in.	30-8½
Width inside, ft. and in.	9-2
Height inside at eaves, ft. and in.	10-0
Height from rails over running board, ft. and in.	14-6¼
Capacity, level full at eaves, cu. ft.	3,723
Light weight, lb.	37,500
Load limit, lb.	131,500
Ratio of pay load to gross load, per cent	77.8
Truck journals, in.	5½ × 10

The crossbearer assembly is also prepared in a jig and consists of $\frac{3}{16}$-in. low-alloy high-tensile steel channels forming a box section. A $\frac{5}{16}$-in. low-alloy high-tensile-steel cover plate is welded to the bottom member of the crossbearers and the center-sill flanges when applied to the sill assembly. Gusset plates of $\frac{5}{16}$-in. low-alloy high-tensile steel connect the crossbearer top member to the center sills.

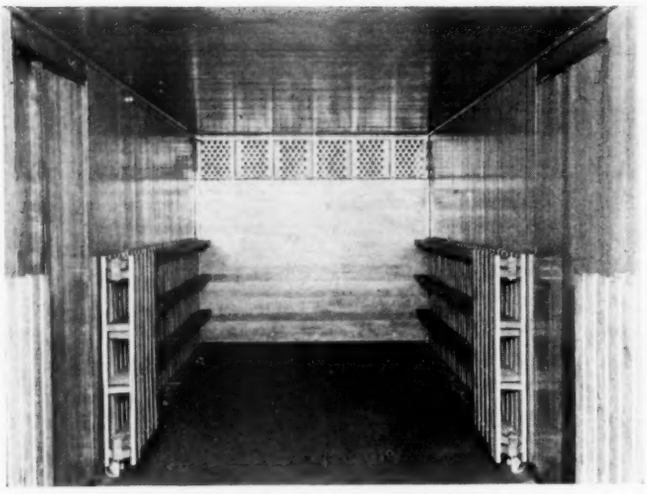
The crossties are $\frac{1}{8}$-in. low-alloy high-tensile pressed-channel sections forming a support for the floor stringers.

All of these assemblies are provded with brake details which can be conveniently welded in place before the units are applied to the main subassemblies.

The underframe subassembly is completed by assembling the above described units the floor stringers, which are 3-in. 5.1-lb. Z-bars, and end-sill angles all of low-alloy high-tensile steel. The air-brake details are also applied conveniently to the underframe subassembly.

Side Construction Subassembly

The sides are made up of 16-gage low-alloy high-tensile single-pickled sheets spot welded to the framing members, which consist of $\frac{1}{8}$-in. pressed Z-section posts, $\frac{5}{32}$-in. pressed Z-section corner posts, $\frac{3}{16}$-in. pressed angle side sills, 3-in. by 2-in. by $\frac{3}{16}$-in. rolled angle side plates, all of low-alloy high-tensile steel. The posts are fusion and spot welded to the side sill and side plates. The transom posts are reinforced by gusset connections to the side sill. The door posts are pressed shapes including spark strips. All of these members are assembled and the side construction completely welded in a



The Refrigerator Car Interior

jig. The doors are made up of 3/16-in. openhearth-steel pressed stiles and bottom rail, and a 1¾-in. by 1¼-in. by 3/16-in. rolled angle top rail to which is welded a 1/16-in. corrugated low-alloy high-tensile-steel plate made in two pieces spot welded together.

Creco door fixtures are used, including the ball-type support and standard locking device.

Ends

The car ends are made of low-alloy high-tensile-steel sheets provided with special extra-long corrugations, which extend to the end flanges, thereby stiffening them. These ends are built in sections and the sections joined together by fusion welding, the lower half being 5/32 in. and the upper half 1/8 in.

Roof

The roof is the turtle-back type assembled as a unit, having a side-plate angle of 5-in. by 3-in. by 3/16-in. low-alloy high-tensile-steel, with the 5-in. vertical leg formed to a large radius. The roof sheets are of 18-gage low-alloy high-tensile steel, extending from side to side and having a lap joint on every carline. The sheets are spot welded to the side-plate angle, carlines, purlines, and end plates.

The carlines for this roof are of 3/32-in. low-alloy high-tensile steel spaced on 3 ft. 5 in. centers. A Z-shaped purline 2 in. deep and made of 16-gage low-alloy high-tensile steel is applied between the carlines, one on each side of the longitudinal center line of the car.

The roof after being completely assembled is placed on the car body and fusion welded to the car sides and ends, but as stated before, the roof may be attached to car sides and ends by rivets if desired.

Other Details of the Box Car

The doors of this car are bottom hung and are effectively sealed. The spark strips are integral with the door stiles, the top and bottom rails of the door forming the seals. These strips are so designed that increased pressure in closing the door means tighter contact of the surfaces, since the strips are wedge-shaped.

The stiles of the door approach a box section in design and are of 3/16-in. steel. The bottom rail is a special pressed section of 3/16-in. steel whose vertical and horizontal dimensions are 8¼ in. and 2¾ in., respectively. The top rail is a rolled section of 3/16-in. steel. The framework of this door has the strength where it is required, that is, in the two stiles and the bottom rail. However, the door panel has special horizontal corrugations 1⅜-in. in depth extending through the height of the door. This panel is made in two pieces and the assembly is all welded.

The running boards are completely assembled to low-alloy high-tensile-steel saddles before being placed on the car, after which the saddles are fusion welded to roof sheets over each carline and the end supports welded to the end plate.

The end plate is a separate unit made of 1/8-in. low-alloy high-tensile steel formed in one piece, with a large radius formed at the roof line. These end plates are butt-welded to the steel end.

The end sill is made of an integral part of the end construction and consists of a 3½-in. by 3½-in. by 5/16-in. angle of low-alloy high-tensile steel, fusion welded to the steel end.

There are two 3-in. 5.1-lb. Z-bar floor stringer per car, extending from bolster to bolster, fusion welded to underframe cross members and to brackets welded to the bolster web.

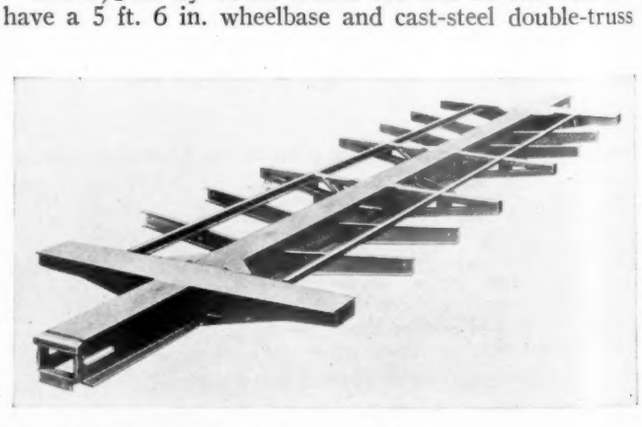
The floor support at the side sill is a one-piece 3-in. by 2-in. by 3/16-in. low-alloy high-tensile-steel angle, running the full length of the side sill. It is punched for ½-in. floor bolts. The 2-in. leg is sheared to 1¼-in. and then the angle is spot welded to the side sill.

The car is lined with 25/32-in. by 3¼-in. tongue-and-groove fir, applied horizontally at the sides and vertically at the ends. Side lining is nailed to 2-in. by 2⅞-in. furrings bolted to the side posts, and the end lining is nailed to 3-in. by 3-in. furrings applied in the corrugations of steel ends. These furrings are held in place by ½-in. bolts attached to clips, fusion welded to the steel end.

The ceiling is of ¼-in. plywood applied crosswise of car in one piece from side to side, spliced at each carline. The joint between plywood sections is covered by 18-gage low-alloy high-tensile-steel strips which are attached to the carlines by self-tapping screws.

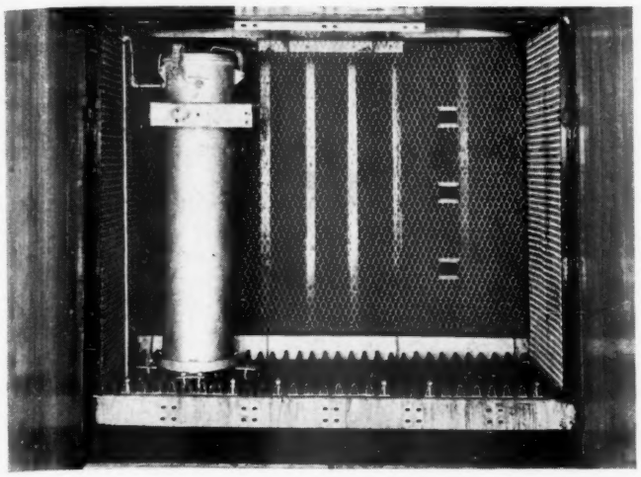
The floor is of 1¾-in. tongue-and-groove fir laid transversely and secured to floor stringers and floor support on the side sill by ½-in. watertight bolts.

The 5½-in. by 10-in. trucks for this 50-ton box car have a 5 ft. 6 in. wheelbase and cast-steel double-truss



The All-Welded Underframe Used on the Box and Refrigerator Cars

spring-plankless side frames of the integral-box type, furnished by the American Steel Foundries. This company also furnished the cast-steel truck bolsters to which are riveted Stucki roller-type side bearings. The foundation brake rigging includes A. A. R. No. 15 A. S. F. brake beams and Schaefer forged bottom connections



Dry-Ice Container in the Ice Bunker

and truck levers. The trucks are equipped with Alco top and bottom steel spring plates; Alco A. A. R., 1936, Class D-2 springs and Cardwell-Westinghouse friction-type spring snubbers.

The 40-Ton Refrigerator Car

The steel shell of the refrigerator car is built on the principle of welding subassemblies on jigs, as was described for the box car; however, these subassemblies of the refrigerator car, that is, the underframe, sides, ends and the roof, are assembled by riveting. It is understood, however, that assembly of both the box car and the refrigerator car can be completed by welding or riveting the subassemblies, as desired by the customer.

In general the underframe follows the design used in the box car just described, with the exception that, in the refrigerator car, the combined bolster center filler and rear draft lugs are the Buckeye skeleton type of alloy cast steel instead of being built-up of H-beams and plates as described for the box car. As in the box car, the bolsters, crossbearers and crossties are pressed and rolled low-alloy high-tensile-steel sections of all-welded construction. The side construction of the refrigerator cars is also the same as that described for the box cars with the exception that 4-in. by 3-in. by ¼-in. rolled angle side sills are used. The doors of the refrigerator car are made up of ⅛-in. pressed-angle stiles and rails to which are welded 16-gage door sheets; Miner lightweight door fixtures are used.

The ends of the refrigerator car are of the builders' corrugated type developed for the box car. The sides of the car ends are flanged to a 3-in. radius and are riveted to the ends of the steel side sheathing.

The roof of the refrigerator car is of the same turtle-back design and construction described for the box car, with the exception that the carlines are spaced on 3 ft. 4 in., instead of 3 ft. 5 in. centers. The running boards are of the same design used on the box car.

The refrigerator car is equipped with Barber Stabilized trucks, Type S-2, with cast-steel double-truss spring-plankless side frames of the integral-box type, furnished by the Buckeye Steel Castings Co. This company also furnished the cast-steel truck bolsters to which are riveted Stucki roller-type side bearings. The only modification in the side frames for these Barber Stabilized trucks is a recess of ⅜-in. in the columns to permit the application of ⅜ in. spring-steel wear plates, after the application of which the side frame conforms to A. A. R. interchange requirements. The ends of the bolsters are changed to provide pockets for the Barber friction castings. Increased spring capacity is provided by this stabilizer because of frictional build-up between the friction castings and wear plate, which also prevents springs going solid. The trucks are also equipped with top and bottom steel spring plates and A. A. R., 1936, Class C-2 outside coil springs furnished by Alco. The foundation brake rigging includes A. A. R. No. 15 Creco brake beams and Schaefer forged bottom connections and truck levers.

Refrigerator-Car Insulation

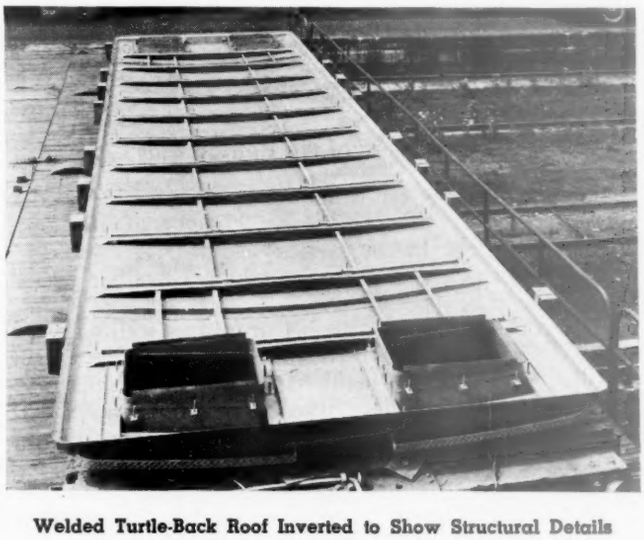
The bottom course of insulation applied on the ⅝-in. blind floor is a 2-in. blanket of Fiberglas faced with muslin, and covers the full width and length of the car in one piece. The top course of insulation is in panel form of 2-in. Fiberglas covered on both sides with Sisalkraft paper and fits snugly between the floor nailers.

In this car one side and end is insulated with Johns-Manville Stonefelt and the other side and end with Fiberglas furnished by Gustin-Bacon. The sides and ends are insulated with two courses of 2-in. Stonefelt or Fiberglas applied in panel form. Panels are made up of a Celotex backing to which the Stonefelt or Fiberglas is cemented; this construction enables repairs to be made to the steel sides in case of necessity without

Principal Proportions and Weights of the 40-Ton Alloy-Steel Refrigerator Car

Length over corrugations on steel ends, ft. and in.	41- 2⅝
Length inside of lining, ft. and in.	39-10⅞
Length between bulkheads, ft. and in.	33- 2¾
Width inside of lining, ft. and in.	8- 3
Height top of floor covering to ceiling, ft. and in.	7- 9
Height top of floor rack to ceiling, ft. and in.	7- 3
Available cubic capacity between ice bunkers:	
Above floor racks, cu. ft.	1,988
Total, cu. ft.	2,130
Capacity of both ice bunkers, lb.	10,000
Length over end sills, ft. and in.	40- 8⅜
Length over striking castings, ft. and in.	41- 8½
Width over side sills, ft. and in.	9- ½
Width over side sheathing, ft. and in.	9- ⅝
Width over eaves, ft. and in.	9- 4¾
Width, extreme over side ladders, ft. and in.	9- 8⅛
Distance from center to center of trucks, ft. and in.	30- 8½
Height from top of rail to center line couplers, ft. and in.	2-10½
Height of side door opening, ft and in.	7- 4¼
Width of side door opening, ft. and in.	4
Height from top of rail to eaves, ft. and in.	12- 4 1/16
Height from top of rail to top of running boards, ft. and in.	13
Lightweight of car complete with trucks, lb.	44,200
Truck journals, in.	5 × 9

In this car one side and end is insulated with Johns-Manville Stonefelt and the other side and end with Fiberglas furnished by Gustin-Bacon. The sides and ends are insulated with two courses of 2-in. Stonefelt or Fiberglas applied in panel form. Panels are made up of a Celotex backing to which the Stonefelt or Fiberglas is cemented; this construction enables repairs to be made to the steel sides in case of necessity without



Welded Turtle-Back Roof Inverted to Show Structural Details

removing the side lining. By applying the lining vertically, the boards at the damaged panel need only be removed.

The roof insulation consists of an upper course of 2-in. Stonefelt in blanket form and a lower course of 2½ in. in panel form. This is made up of Johns-Manville Stonefelt and Celotex.

The insulation for the side door consists of two courses of 2-in. Fiberglas muslin covered in panel form.

The hatch plug is insulated with two courses of 2-in. Stonefelt.

The inside lining consists of $^{25}/_{32}$-in. by 3¼-in. tongue-and-groove fir applied vertically on sides and ends. The side lining is nailed to 1⅝-in. by 2½-in. yellow-pine horizontal furrings bolted to side posts; the end lining is nailed to 1⅝-in. by 2½-in. yellow-pine horizontal furrings bolted to clips, fusion welded to steel end.

The ceiling is formed of $^{25}/_{32}$-in. by 3¼-in. tongue-and-grooved fir applied transversely of the car and nailed to 2⅜-in. by 2½-in. yellow-pine roof purlines bolted to clips, fusion welded to the roof carlines.

The floor consists of 1¼-in. by $5^{1}/_{16}$-in. tongue-and-groove fir laid transversely and spiked to the floor nailers. Over this floor is applied Johns-Manville membrane flooring.

The Ice Bunkers

The ice bunkers, of builder's design, have floor pans which are continuations of the Johns-Manville membrane floor. Perfection drains of galvanized steel, and a. c. f. well traps of galvanized pressed steel are used. The ice-grate support is built-up of pressed low-alloy high-tensile-steel sections fusion welded together to form a single unit. The ice-grate support is carried on shelves at the side of the car, which are a part of the car framing. There are three ice-grate sections in each bunker, which sections are built-up of ⅛-in. inverted-V pressed grate bars fusion welded to $^{3}/_{16}$-in. grate-bar ties. These sections are bolted to the supports and are readily removable.

The bulkhead unit is made up in three sections—two side and one center section—each completely finished before placing in the car. The bulkhead header brace is composed of pressed alloy-steel sections fusion welded together—all metal parts are galvanized, while the sides, end walls, and the back of the wood bulkhead are coated with car cement and treated with asphalt-treated felt. The removable wood bulkhead is built-up on a single unit of 1⅛-in. by 5⅛-in. tongue-and-groove fir, framed together with galvanized pressed channels at the sides. The end and sides of the icebox are faced with Steelcrete 1¼-in. Cop-R-Loy bunker mesh. A 4-in. by 4-in. mesh of 0.035-in. diameter galvanized wire screen is provided at the top opening of the bulkhead.

Other Features of the Refrigerator Car

There is one dry-ice container in each bunker at diagonally opposite corners of the car. Each container, of the builder's design, has a capacity of 300 lb., and is so designed that CO_2 gas can be exhausted either into the car or the atmosphere.

The container can be applied to old as well as to new cars as it is inserted through the hatch and rests on the ice grate. In the combination of dry ice and water ice in ice bunkers as developed by the American Car and Foundry Company, tests show a lower uniform temperature to be obtained with less consumption of water ice so that the cost of both dry ice and water ice is lower than the cost of water ice alone as used in a conventional ice bunker. The tests, of course, were conducted under the same condition. The use of this device is optional with the purchaser of the car.

The floor rack, of 1¾-in. by 4⅞-in. fir rails and 1⅛-in. by 4-in. yellow-pine slats, is held in place by hinges which permit raising the rack when cleaning the car. Exposed metal parts are galvanized.

The car is equipped with double-swinging doors which provide a 4-ft. opening. Miner door fixtures and La-Flare packing are used. The doors are also fitted with striking plates and hooks for holding the door open, and with Johns-Manville threshold plates.

The hatch plate and cover, which is of builder's design, has a flexible connection between the cover and the plug, providing sufficient leverage to break the ice seal around the plug. One ice hatch is located at each corner of the car. The hatch cover is of Super Diamond plate, flanged on all sides. The cover and plug can be set in the ventilating position by means of a ventilating bar.

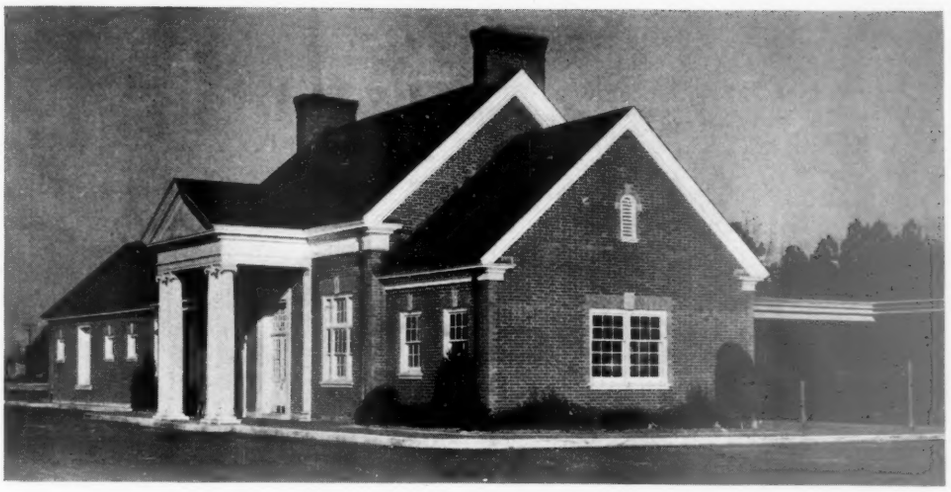
Partial List of Materials and Equipment on the a. c. f. 50-Ton Box and 40-Ton Refrigerator Cars

Box Cars

Side frames; truck bolsters	American Steel Foundries, Chicago
Bottom connections; truck levers	Schaefer Equipment Company, Pittsburgh, Pa.
Side bearings	A. Stucki Co., Pittsburgh, Pa.
Hand brakes; wheels	American Car and Foundry Company, New York
Springs; spring plates; journal-box lids	American Locomotive Co., Railway Steel Spring Div., New York
Axles	Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Journal bearings	National Bearing Metal Corp., St. Louis, Mo.
Couplers; coupler yokes	Buckeye Steel Castings Company, Columbus, Ohio
Uncoupling device	Union Metal Products Company, Chicago
Draft gear; spring snubbers	Cardwell Westinghouse Company, Chicago
Air brakes	Westinghouse Air Brake Co., Wilmerding, Pa.
Brake shoes	American Brake Shoe & Foundry Co., New York
Brake beams	American Steel Foundries, Chicago
Side door fixtures	Chicago Railway Equipment Co., Chicago
Defect card holder	MacLean-Fogg Lock Nut Co., Chicago

Refrigerator Car

Side frames; truck bolsters	Buckeye Steel Castings Company, Columbus, Ohio
Hand brakes; wheels	American Car and Foundry Company, New York
Axles	Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Springs; spring plates; journal-box lids	American Locomotive Co., Railway Steel Spring Div., New York
Journal bearings	National Bearing Metal Corp., St. Louis, Mo.
Couplers	Gould Coupler Corp., Depew, N. Y.
Coupler yokes	Buckeye Steel Castings Company, Columbus, Ohio
Uncoupling device	Union Metal Products Co., Chicago
Draft gear	W. H. Miner, Inc., Chicago
Bottom connections; truck levers; wear plates	Schaefer Equipment Company, Pittsburgh, Pa.
Stabilizers	Standard Car Truck Co., Chicago
Center filler and rear draft lug	Buckeye Steel Castings Company, Columbus, Ohio
Air brakes	New York Air Brake Co., New York
Brake beams	Chicago Railway Equipment Co., Chicago
Brake shoes	American Brake Shoe & Foundry Co., New York
Side bearings	A. Stucki Co., Pittsburgh, Pa.
Door fixtures	W. H. Miner, Inc., Chicago
Side-door threshold; waterproof floor	Johns-Manville Sales Corp., New York
Door packing	American Car and Foundry Company, New York
Insulation:	
Stonefelt	Johns-Manville Sales Corp., New York
Fiberglas	Gustin-Bacon Mfg. Co., Kansas City, Mo.
Board panels	Celotex Corporation, Chicago
Hatch covers	Alan Wood Steel Co., Conshohocken, Pa.
Bunker wire (Consolidated Expanded Metal Co.)	Wheeling Steel Corp., Wheeling, W. Va.
Defect card holders	MacLean-Fogg Lock Nut Co., Chicago



The Attractive, Colonial-Type Passenger Station Built by the Chesapeake & Ohio at Williamsburg, Va., in Connection With the Restoration of That Colonial City

Bridge and Building Men Hold Intensive Meeting

Abstracts of two addresses and five additional committee reports presented before the forty-fifth annual convention in Chicago

Part II

THE *Railway Age* of October 29 contained, as Part I, a running report of the activities of the forty-fifth annual convention of the American Railway Bridge and Building Association, held in Chicago on October 18-20, together with abstracts of three addresses and three committee reports presented before the convention. The addresses were by R. A. Van Ness, bridge engineer, Atchison, Topeka & Santa Fe system, on Lessons to Be Learned from Recent Bridge Failures; by L. P. Kimball, engineer of buildings, Baltimore & Ohio, on Current Trends in the Design of Railway Buildings; and by A. N. Williams, president, Chicago & Western Indiana, and Belt railways of Chicago, who urged the co-operation of employees in solving the railways' problems. The committee reports covered Recent Developments in Field Methods in the Construction of Timber Trestles; The Inspection and Preparation of Wood Surfaces for Painting; and The Maintenance of Cinder Pits.

Other features of the meeting, abstracts of which are presented on this and following pages, included an address by Samuel H. Cady, vice-president and general counsel, C. & N. W., on What's Ahead for Our Railroads?; an address by J. E. Long, superintendent of safety, D. & H., on Safety in These Days of Reduced Forces; and reports on The Maintenance of Movable Bridges; The Possibilities and Limitations of the Acetylene Cutting Torch; The Insulation of Railway Buildings; Pipe Lines for Railway Water Service; and Meeting Today's Demands with Cranes and Pile Drivers.

What's Ahead for Our Railroads?

By Samuel H. Cady*

The earnings record of the railroads of this country for the first six months of 1938 indicate that it is a dying industry. The railroads earned only about one-third of the interest charges accruing during that period. This statement is the more arresting when we realize that the bonded indebtedness of our Class I railroads is only about 40 per cent of the investment.

What has happened to the railroads? Railroads which were prosperous for 60 or 70 years have suddenly become impoverished. Many things have happened to them and I will review a few of them.

The railroads have been a political football for many years; politicians have vied with each other in damning them; laws were passed by the federal government and by the states regulating them; railroad management now has little control over many subjects which are purely managerial.

The railroads made contracts with organized railroad labor under conditions entirely different from those of today. They have been unable to change these contracts. At the time these contracts were made, no one could have imagined that an engineer would receive one and a third days' pay for operating a train for 2 hours and 5 minutes, or that under any circumstances would an engineer receive a full day's pay for 1 hr. and 16 min. of work. Besides, many of the decisions of the National Adjustment Board, interpreting contracts between the railroads and their employees, have greatly increased operating costs.

Taxing bodies have usually been liberal with railroad money. In many states, railroads have at times been assessed twice the value of their properties when measured by any reasonable standard in values. The

* Vice-president and general counsel, Chicago & North Western.

recent Railroad Retirement act and the Social Security act added substantially to the tax items of railroad operating expenses.

The most important factor in producing the present plight of the railroads has been competition, much of which has been subsidized. In addition to these conditions, the railroads have been kept from doing many things that would have helped them meet the competitive situation. The Transportation act of 1920, as interpreted, practically blocks consolidations where they would be most advantageous, by providing that competition shall be maintained as fully as possible. The railroads are not permitted to engage in the trucking business where it would help them most.

In this connection, a word should be said about the attitude of organized railroad labor. It has become very vocal and its noise has frightened many members of Congress. The policy of organized railroad labor has been all too often to prevent the railroads from doing those things which would help them, and, generally speaking, supporting measures which would cripple them.

I now come to the question propounded in my subject, "What's Ahead for the Railroads?"

One thing is certain. The conditions under which they now operate cannot continue. Have the railroads outlived their usefulness and will they go the way of the stage coach? Absolutely and emphatically, no! Transportation by railroad is the most economical for large-scale movements which has yet been devised. Comparative studies made recently by the National Resources Board develops the fact that it takes 50 man-hours to move 1,000 tons of freight one mile over a concrete road with a 5-ton truck, as against 6 man-hours to move 1,000 tons of freight the same distance on Class I railroads.

The railroads have a permanent place in the transportation of this country unless transportation methods change substantially from what they are at present. Their place is assured as a means of national defense. This is a country of distances; speed in transportation is of great importance in time of war. What a sorry sight would be created if we found it necessary to move hurriedly a couple of million troops and their armaments and supplies from New York to Los Angeles by trucks over politically-built highways.

Unless something is done to remove the handicaps under which the railroads operate, it will be necessary for the government to take them over. That would be a national calamity. Government ownership would constitute a debasing influence in the political life of our country; it would offer a constant temptation to an administration to make concessions to employees, states, cities and communities as bait for political preferment. Thus a party in power could increase the likelihood of self-perpetuation.

Government ownership of railroads would be followed progressively and quickly by government ownership of the coal mines, steel mills and lumber mills, required for supplying the railroads. This would be a long step toward the socialization of all industry. Government ownership would bog down the efficiency of the railroads; the political strength of railroad employees would mean concessions, resulting in increased operating expenses; the demands for unjustified extensions of lines, new station buildings and non-self-supporting services made by politically powerful interests and granted as a matter of political expediency, would still further increase investment and operating expenses; demands made by the farmers for reduced rates on agricultural products, and similar demands by other vote-controlling blocs, would inevitably reduce income and a deficit would result. Thus an additional burden would be put on the taxpayers to make up the deficit.

What, then, should be done? There are two principal things.

First: The restraint against the consolidation of railroads should be removed. Consolidations should be encouraged rather than discouraged. Where railroads are strongly competitive they should be required to consolidate in order that wasteful duplication of facilities and service should be eliminated. Incidentally, the public should insist on a discontinuance of all make-work legislation, and on revision of the working rules so that a reasonable amount of work should be done by every employee in consideration for reasonable wages paid.

Second: The whole policy of the government in fostering water and truck transportation at the expense of the railroads should be changed, or else the government should do the same for railroad transportation as it does for inland waterway transportation, namely, foot the bills for maintaining the rights of way. What would this cost? Probably about $750,000,000 per year. This might seem a tremendous sum to pay annually as a subsidy to the railroads, but it is only about half as much as the governments (exclusive of cities) are expending annually for highways.

It will be said that this suggestion is preposterous. What is preposterous about a suggestion that the government give equal treatment to all competing forms of transportation, especially when the suggestion applies to a national defense necessity? Besides, the suggestion does not entail nearly the expense which would follow government ownership.

Safety in These Days of Reduced Forces

By John E. Long*

Supervisors are the key men in procuring the co-operation among employees, which is necessary, not only for the prevention of accidents, but for general efficiency in operation as well. The supervisor is responsible for the co-ordination of the work of those under him with the work of those in other departments. He should possess qualities of leadership and executive ability. He should be able to give instructions in a way that commands not only respect, but confidence, good will and a willingness to comply.

When a severe injury or a fatality occurs in any department, the heads of that department are always keen to do something drastic about accident prevention to avoid a recurrence. However, when a comparatively minor injury occurs, the fact is often overlooked that the seriousness of the results of any accident has nothing whatever to do with its cause, and therefore, with its prevention. In other words, the serious injury and the minor injury are usually the result of exactly the same cause, and both are important as an indication of the effectiveness of your accident prevention program.

A supervisor must show by his attitude and actions that he is 100 per cent for safety. This is very important. Can you reasonably expect a man working for you to carry out safety instructions, if you do not yourself demonstrate by your own actions that these instructions are not only practical but important? The men working for you are more apt to do what you do than what you tell them to do.

Safety committeemen, properly guided by a supervisor, can be of considerable help to him in setting up a

* Superintendent of Safety, Delaware & Hudson.

proper organization to prevent accidents to the men under their supervision, and, after all, successful accident prevention is largely a question of proper organization. Supervisors know that if accidents happen to men under their supervision, they are held responsible. On the other hand, if men under their supervision work without accidents, they receive credit for the performance.

With the average workman, it is not difficult for the supervisor, by the use of tact and a friendly attitude, to impress upon him the importance of everybody pulling together to keep men from being injured. The question is what to do about the fellow who is difficult to reach by ordinary methods—this one man in a hundred who has to be talked to in a different language. This is a difficult question to answer, because it is impossible to lay down a hard and fast rule as to the reaction of each individual under given circumstances. Each case of this kind presents a problem in itself, which requires study on the part of the supervisor who is personally familiar with the men.

A supervisor's duty to promote accident prevention, even to the extent of protecting the worker from his own careless acts, may be open to controversy, but a supervisor's duty to his company, as regards the economies of accident prevention, cannot be questioned. Be as sympathetic for the individual as you can. That is natural, but only by viewing safety in all its phases, as a part of one's duties will best results and those of a really lasting quality be obtained.

Whenever I am called upon to defend the existence of the safety movement, I point with pride to the decreasing number of accidents on railroads and in industries where safety is both preached and practiced. This, of course, is the primary objective of safety—to preserve lives and bodies.

I do not recall who first said "safety promotion work is like riding a bicycle—stop pedaling and you fall off"—but it seems to me that it is a thought which might well be kept in mind. It is not what you did yesterday, or before, but what you do today, tomorrow, next week and next year, that will decide the success of your accident prevention program. Remember—when you stop pedaling—you fall off.

The Maintenance of Movable Bridges

The report on The Maintenance of Movable Bridges, prepared by a committee of which A. E. Bechtelheimer, assistant bridge engineer, Chicago & North Western, was chairman, was a veritable manual on the problems involved in movable bridge operation and maintenance, and of the many factors which should be given consideration to insure the most reliable operation with minimum maintenance costs.

Discussing separately swing spans, vertical-lift spans and bascule-type bridges, together with their operating machinery, the committee gave particular attention to those factors involved which might interfere with operation, or increase the problems of proper maintenance. Along with this, it stressed the importance of frequent inspection and care of all operating machinery, including auxiliary power units, and laid particular emphasis on the matter of adequate and proper lubrication. Concerning the latter, it said, in part, as follows:

"The operating machinery, bearings and all moving parts of movable bridges require careful lubrication to insure ease of operation and minimum wear of surfaces in contact. Fast moving parts and bearings under heavy loads should be given special attention. The importance of lubrication demands that the responsibility for this work be definitely fixed. It is necessary that supervising forces see that the work is done thoroughly. Costly repair work can often be avoided by close attention to the lubrication of the operating machinery.

"It is essential that good grades of lubricants be used. Proper care in the selection of lubricants will make it unnecessary in many cases to change the grades of the lubricants for summer and winter lubrication. A careful check of each lubricating problem should be made to determine the kind of lubricant to be used."

In another section of its report, the committee stressed the importance of making sure that all operators of movable bridges are alert to their responsibilities and are fully informed concerning the various devices and mechanisms in their charge. The report said, in part:

"It is imperative that the operating personnel be fully informed and thoroughly familiar with the functioning of the various devices and mechanisms provided to insure safe and efficient operation of the bridge. Their correct understanding of and familiarity with the uses of these various devices and mechanisms should be checked frequently under actual operating conditions. The operating personnel should be made to realize that the electrical equipment, for example, of the average movable bridge includes much delicate and relatively complicated apparatus that should be tested freqently. This equipment requires exact adjustment, and they should know from their experience in the handling of the bridge when adjustments are necessary."

Possibilities and Limitations of the Acetylene Cutting Torch

In its investigation of this subject, extended to include the practices of a large number of roads, the committee, of which J. L. Varker, bridge and building supervisor on the Delaware & Hudson, was chairman, found that in the hands of skilled workmen, the oxy-acetylene cutting torch has widespread application in railway construction and maintenance work, and is today found in carpenter, steel, water service, plumbing, dock-building, machinist, sheet metal and bridge gangs. In its report, which was confined primarily to a discussion of the uses of the cutting torch, the committee listed the following uses as among those most common: Reframing steel for repairs and alterations; fabricating and erecting structural steel; cutting wreckage and damaged parts; demolishing structures; cutting reinforcing rods in new and old work; cutting and shaping parts to be welded; cutting plates to intricate shapes and patterns; cutting bolts, rods, etc.; beveling the edges of plates and shapes prior to welding; cutting cast iron and other pipes; melting out lead from joints in cast iron pipe lines; fabricating pipe line fittings; cutting rails in side tracks; and cutting rail joint bolts when relaying rail.

Among the more uncommon uses of the torch reported to the committee were the cutting through of several thicknesses of plates simultaneously (stack flame cutting); under-water cutting; illumination in cases of emergency; removing heavy rust scale from bridge members; and the chipping off of masonry construction by first heating it and then cooling it rapidly with water.

In special sections of its report, the committee discussed the equipment and supplies involved in oxy-acetylene cutting and the various methods employed in cutting special metals and alloys, and then presented several examples of specific instances where bridge forces had used the cutting torch to large advantage.

Concerning the limitations placed upon the cutting

torch by some roads, the committee mentioned the cutting out of rivets from structural members; the cutting of main track rails; the cutting of bolt holes in rails; the cutting of rivet holes in structural members; operations around coal chutes or docks of timber construction where the hazard of fire is present; and operations within grain elevators where dust explosions might occur.

In another part of its report, the committee stressed the importance of confining the operation of the cutting torch to trained operators. "To permit inexperienced persons to use the cutting torch," it said, "is dangerous, results in poor workmanship which is harmful to steel, and is uneconomical in the use of both labor and material."

Speaking of the effectiveness and economy of the cutting torch, the committee pointed out that the initial cost of the oxy-acetylene equipment is low in comparison with the outlay required for mechanical cutting devices capable of performing the same work. "Quite often," it said, continuing, "one can accomplish with the cutting torch what otherwise would require the use of several mechanical machines and tools." Summing up its findings, the committee expressed the opinion that the field or possibilities for the use of oxy-acetylene equipment is constantly enlarging, and that the limitations of the cutting torch have not yet been reached.

The Insulation Of Railway Buildings

According to the report of the committee handling this subject, of which Neal D. Howard, engineering editor, *Railway Age,* was chairman, the railways, in spite of the considerable use of building insulation by a number of roads, are not, as a whole, insulation conscious, and lag considerably behind industry in general, and the home building industry in particular, in the general acceptance and use of this class of building material. This conclusion, the committee said, must be drawn from the information which it collected from 59 representative roads of the United States and Canada, concerning the extent to which these roads have already used or are now contemplating using the various forms of thermal insulation in building construction, other than for cold storage or other refrigerated buildings.

It is evident, however, the committee added, that this situation has been accentuated during the last seven or more years by the lack of funds for building construction and maintenance; that there is a growing appreciation of the economies and other benefits to be derived through the proper use of insulation; and that with a revival of railway building construction and maintenance programs, a much wider use of insulation can be expected.

Concerning the extent to which building insulation has already been used by the railways, the committee said, in part, as follows:

"The extent to which insulation has been used in railway buildings, according to our investigation, varies widely, both as between roads and between different sections of the country. The more northerly roads, as might be expected, with the incentives of larger fuel savings, more economical heating installations, and increased comfort in winter, have showed much greater interest in building insulation than southern roads."

"Two significant features of the data collected are the extent to which some roads have employed insulation, while others in equally as cold or colder territories have taken little or no advantage of it, and the wide range in the types of buildings insulated on the various roads. It is also interesting to note the extensive use of insulation in its various forms by several roads, both in new construction and in building repair and modernizing work."

Following this part in its report, the committee, on the basis of information made available to it, discussed the extent and variety of uses for which thermal insulation has been used by a considerable number of roads, giving particular attention to the extensive use of this material on the Western region of the Canadian National, and on the Baltimore & Ohio. On the Western region of the Canadian National, it was reported that a total of 865 buildings have been insulated, these including 448 passenger stations, 337 section dwellings and 80 miscellaneous structures. According to the report, those in charge of carrying out this extensive program of insulation estimate that the saving in fuel resulting is from 25 to 35 per cent, sufficient to pay for the added cost involved in from 3 to 4 years. In addition, it said that in connection with new construction, it had been found possible to reduce the amount of radiation and boiler capacity required 30 to 40 per cent, effecting substantial economies in this regard.

The Baltimore & Ohio, according to the report, started using insulation for various purposes about 12 years ago, and to date has applied it to varying extent and for various purposes in more than 150 structures, including numerous enclosed exterior stairways and passenger platform shelters; freight houses; piers; warehouses; produce buildings; office and yard buildings; passenger stations; pump houses; and water-treating plants.

The committee recognized that considerable thermal insulation, in a wide variety of types, has been used by the railways, and that, in the aggregate, a large number of railway buildings had been treated with insulation to some extent for various purposes. However, it said that it could not overlook or alter the fact that large as this total number of buildings may be, it represents only a small proportion of the buildings on the railways, heated or unheated, to which insulation might be applied to advantage in one form or another to the degree that climatic or other conditions may warrant.

As a result of its investigation, the committee said that, with few exceptions, the railways appear to have made relatively little scientific study or analysis of the possibilities for savings through the use of insulation in their buildings generally, or individually. Taking cognizance of this fact, it discussed the fundamental factors involved in determining the relative effectiveness and economy of insulating any particular structure. It then presented a detailed example to demonstrate how relatively simple it is to calculate the reduction in heat losses in any building as the result of applying thermal insulation, and, directly therefrom, any economic saving involved.

In a series of recommendations, the committee recommended further study by the railways of the possibilities of economies and of increased employee and patron comfort through the use of insulation. In this latter regard, it said, as follows:

"The committee, along with the majority of those collaborating in its report, believes that there is a wide field for the effective use of insulation in railway buildings, in both new construction and in existing structures. It fully recognizes the limitations of its use, however, in certain types of railway structures under favorable climatic conditions, and recommends, therefore, that the question of the use of insulation in any particular building be based on a careful study of all of the advantages to be derived, both tangible and intangible.

Report on Pipe Lines For Railway Water Service

In a detailed report on this subject, a committee, of which R. E. Dove, assistant engineer, Chicago, Milwaukee, St. Paul & Pacific, was chairman, reviewed the various types of pipe and pipe fittings which are available for various classes of water service lines, and then discussed the various factors which must be given consideration in the selection of pipe and fittings to insure the proper functioning of the lines and their most economical maintenance. The outstanding note of the report was the emphasis placed upon the importance of analyzing all of the factors involved before deciding what particular kind of pipe to use for any specific installation. In this connection, it said that when considering the laying of a pipe line, it must be recognized that every project is different, and that due allowance must be made for the many factors entering into the particular problem.

For the benefit of those directly concerned with this subject, it listed four considerations relative to the class of service involved; six considerations relative to the location of pipe lines; and six considerations which have a bearing on both the initial cost and the maintenance of pipe lines. Only by giving careful consideration to all of these factors, it said, can one be assured that he will select the best adapted and most economical pipe to meet the specific conditions involved.

Among the various kinds of pipe discussed were wood, cast iron, wrought iron, steel, asbestos-cement, copper, brass and lead. Concerning cast iron pipe, the committee referred briefly to its corrosion-resisting properties and then commented favorably on centrifugally-cast pipe, which it said is becoming quite popular. Genuine wrought iron pipe, it pointed out, is generally esteemed for its resistance to atmospheric corrosion and to fatigue under shock and vibration.

One of the advantages of spirally welded pipe, made from either iron or steel, is, according to the report, that this pipe can be obtained with one or more fittings welded on to a length, thus eliminating weight and possible points of leakage. Properly coated and installed, it said, steel pipe will give many years of useful service underground.

For lines subject to tuberculation or electrolysis, the committee recommended that consideration be given to asbestos-cement pipe, and, referring to copper pipe, said that this pipe, with its high ductility and resistance to corrosion and electrolysis, is adapted to many types of pipe line installation.

The committee stressed the importance of investigating in each instance the possibilities for the exterior and interior corrosion of pipe lines, and the possibility of their failure due to electrolytic action, and discussed the various methods that are being employed to overcome these destructive agencies, including paints, metallic coatings, bituminous and cement coatings and linings. In conclusion, it emphasized again the fact that each pipe line project must be studied from the many angles involved to ascertain the pipe material and joints best suited.

Meeting Today's Demands With Cranes and Pile Drivers

The increased weight of locomotives, and the higher speeds of both passenger and freight trains in recent years have had a most important bearing upon railway bridge structures and the equipment necessary to construct and maintain them, according to a committee, of which O. W. Stephens, supervisor of track on the Delaware & Hudson, was chairman. Generally, it said, stronger and heavier structures have become necessary, which require heavier cranes and pile drivers of modern types to handle the work in connection with them.

Based upon information collected from 45 roads in different sections of the country, the report dealt primarily with the developments which have been made in pile drivers and cranes, and the special features necessary in such equipment to meet today's demands in the most effective and economical manner. The standard pile driver, according to the committee, is of first importance in bridge work, but it pointed out that the majority of these units are fitted only for driving piles, which is a serious handicap where other classes of work must be done. Many of these "regular" pile drivers in service have been made much more effective through the use of single- and double-acting steam hammers, instead of the old drop hammer, according to the committee. "It is a known fact," it said, "that the modern steam hammer will drive 50 per cent more piling in a given period of time than a drop hammer." In spite of this improvement, the committee pointed out that these older type machines cannot compare with machines of more modern design in efficiency and speed of operation.

Modern track drivers, the report stated, should be full-revolving, self-propelling at speeds of 15 to 20 m.p.h., and operated by either steam or Diesel engines. Pendulum-type pile leaders should be used in all cases so that piles can be driven to proper batter as shown on the standard plans. Such drivers, it said, can be used to handle all material in pile trestle construction, as well as for many other classes of work, and are preferred by many roads that have a sufficiently large amount of pile driving work to keep the machines busy during most of the year.

Continuing, the committee described locomotive cranes equipped with swinging leaders and steam hammers, and the convertible pile driver and crane, equipped with folding pile-driving leaders and platform, which can be converted readily for either pile-driving or crane work. It saw many advantages in these types of machines, especially the latter type, for those roads with a limited amount of pile driving work, and emphasized their versatility, which enables most roads to keep them in effective use most of the year.

The report then described a specially-constructed convertible crane and pile driver that is being used to advantage on the Delaware & Hudson, and, continuing, discussed the various types of cranes being employed by the railways, including the steam- or oil-operated self-propelled crane of 25 to 60 tons capacity; wrecking cranes, with capacities from 60 to 200 tons; and light, full-revolving, self-propelled cranes, adapted and used for laying rail and many lighter hoisting operations in connection with bridge and trestle work.

Other types of cranes referred to were the auto and crawler-mounted types. For these, the committee saw a wide field of application, pointing out that the gasoline or Diesel crawler-type crane can be used extensively in overhead highway bridge construction, driving piles, ditching, cleaning out under bridges, trenching for and laying pipe, back filling and handling material for all departments.

In conclusion, the committee called attention to the large investment which the railways have in power equipment and stressed the importance of its proper use and care in order to secure the maximum return on this investment.

File C. M. St. P. & P.—C. & N. W. Merger Plan

Operating economies of ten million a year claimed—no drastic curtailment of employment anticipated

A PROPOSAL to merge the Chicago, Milwaukee, St. Paul & Pacific and the Chicago & North Western, both of which are in receivership, on a basis whereby both bond and stockholders would participate, operating economies of more than $10,000,000 a year would be effected and labor would be represented on the board of directors, was filed with the Interstate Commerce Commission on October 26. The plan was originated by the protective committees for the preferred stockholders of the Milwaukee and the common stockholders of the North Western, because they felt that no plan for immediate reorganization of either road as a separate entity is feasible in view of current business conditions and the revenues of the restricted railroads, and because operating economies could be effected which would increase the average annual normal earnings of the combined companies $10,000,000 or sufficient to pay interest and dividends on a new capitalization.

Under the plan a new company would be formed to take over the present companies, including the Chicago, Terre Haute & Southeastern, the Chicago, Milwaukee & Gary, the Chicago, St. Paul, Minneapolis & Omaha, and the Escanaba, Iron Mountain & Western, through the exchange of new securities for old. The capitalization of the new company would comprise $770,987,000 of equipment obligations, bonds and preferred stock and 5,000,000 shares of common stock, as compared with $1,456,156,252 of equipment obligations, loans, bonds, preferred and common stock and interest, accrued and unpaid, of the present companies. The value of the physical properties of the present companies, according to the committees, is $728,446,507 for the Milwaukee, $503,550,385 for the North Western, $96,330,958 for the Omaha, $121,916,462 for equipment, and $1,073,344 for the Escanaba, Iron Mountain & Western, or a total of $1,451,317,656.

Savings Larger Than $10,000,000

The preliminary studies made by the committees show a saving of $10,000,000 per year. However, the report states that "they by no means include all the important economies which can be effected through consolidation. For example, no study has been made of the savings from the co-ordination of freight service, which in the opinion of the stockholders committees, would probably produce the largest single item of savings. The study of the co-ordination of passenger service has been limited to the service between Chicago and Milwaukee, and one train between Chicago and Madison. The savings from passenger traffic co-ordination between Chicago and Omaha, Chicago and the Twin Cities and Chicago and Green Bay should dwarf the savings produced from the Chicago and Milwaukee co-ordination, to say nothing of the savings from passenger co-ordination on numerous branch lines. No estimate has been made of the savings in the general offices, of savings from taxes, or of savings of interest on the cost of equipment which could be abandoned through consolidation. It is the well-considered opinion of the stockholders' committees that the savings upon complete consolidation of these two railroads would amount to many millions of dollars more than the $10,000,000."

The economies set forth by the committee and aggregating $10,000,000 are as follows:

1. Co-ordination abandonments which involve the abandonment of unimportant parallel lines, with contemplated joint use of the remaining line, should produce annual savings for both roads of $1,769,750.

2. Station and terminal co-ordinations, which constitute the use of joint station and terminal facilities, excluding the larger cities, should produce estimated annual savings of $366,406.

3. Savings from passenger train service consolidation between Chicago and Milwaukee, and one train between Chicago and Madison should produce annual savings of $640,000.

4. Savings from traffic diversion, which include diversion of North Western traffic which now goes to the Belt Railway of Chicago, diversion of North Western traffic at St. Paul, and utilization by the Milwaukee railroad of the lines of the Omaha instead of the Northern Pacific between St. Paul and Duluth would produce annual savings of $879,000.

5. Savings from the joint use of coal supplies of the two railroads located in Southern Indiana and Southern Illinois should produce annual savings of at least $1,500,000, and it is estimated that such savings may amount to as much as $2,048,267 per year.

6. Economies resulting from the co-ordination of outside agencies, consisting primarily of savings in branch offices, advertising and traffic associations, should produce annual savings of $1,300,000.

7. Consolidation of Chicago terminal and other opera-

Capitalization

	New Company	C. M. St. P. & P.	C. & N. W.
Equipment Obligations	$45,987,000	$30,516,671	$14,973,000
R. F. C. and Other Loans	.....	13,647,609	48,700,000
First Mortgage Bonds	80,000,000	.....	.....
General Mortgage Bonds Series 1	185,000,000	.....	.....
Income Mortgage Bonds Series A	170,000,000	.....	.....
Income Mortgage Bonds Series B	50,000,000	.....	.....
Bonds of Present Companies	.....	460,619,924	311,340,000
Total Loans and Bonds	485,000,000	474,267,533	360,040,000
Interest Accrued and Unpaid	.....	108,378,748	50,432,000
Preferred Stock	240,000,000	119,307,300	22,395,000
Total Loans, Bonds and Preferred Stock	770,987,000	732,470,252	447,840,000
Common Stock	5,000,000*	117,406,000	158,440,000
Grand Total	.....	849,876,252	606,280,000

* Shares.

tions should produce a saving of $900,000 annually, based upon 1930 volume of business.

8. The effect of consolidation upon combined expense of maintenance of equipment is estimated to produce annual savings of $3,000,000.

Earnings Available for Interest

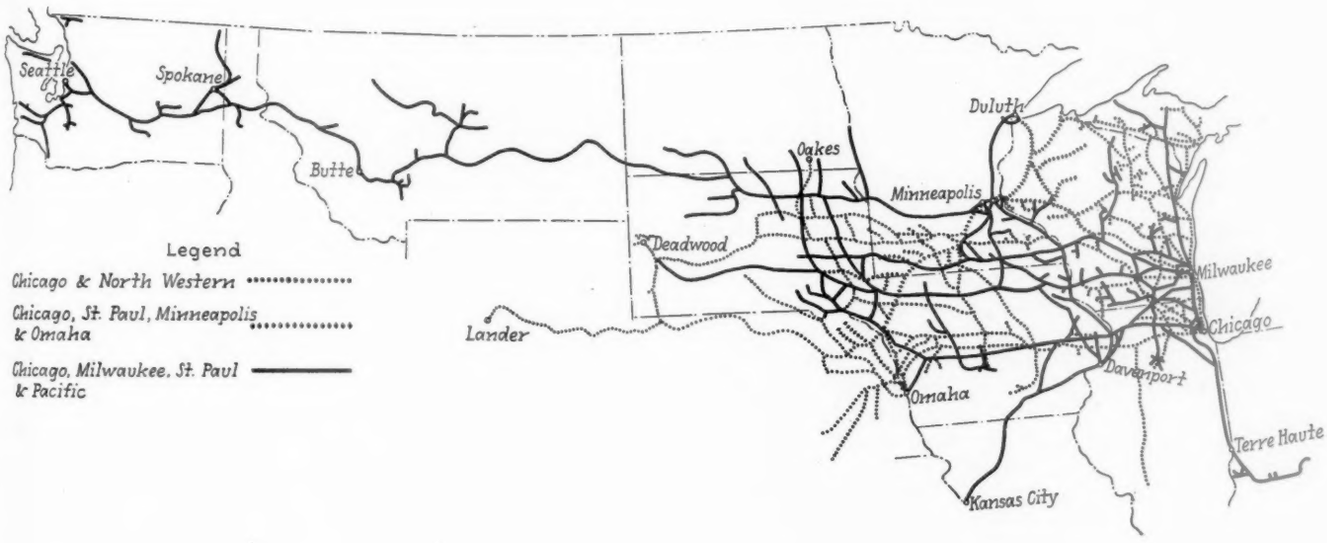
The plan is based primarily on the ability of the new company to earn. As a basis for determining the earning ability of the consolidated company, reference is made to the studies of estimated earnings made by the Group of Institutional Investors as holders of securities of the Milwaukee and by the Life Insurance Group Committee and the Mutual Savings Bank Group Committee as holders of securities of the North Western. These groups calculated that the minimum earnings of the Milwaukee would be sufficient to permit the issuance of fixed obligations having an annual interest requirement of $6,556,000. For the North Western it was calculated that the total fixed interest debt might safely carry an annual interest charge of $5,605,000. Accordingly, the committee assumed on this basis that the minimum annual earnings of the new company available for interest would be $12,100,000, exclusive of any savings from consolidation. The Institutional Investors of the Milwaukee used average normal earnings figures of $15,894,000 for the Milwaukee, and $14,325,000 for the North Western. On this basis the average normal earnings of the new company, according to the committee, should be approximately $30,000,000 a year. To this was added the $10,000,000 estimated savings from consolidation, which made the average normal earnings of the new company approximately $40,000,000.

The committees made no attempt to make allocations of the new securities to the holders of existing securities for two reasons: First, they admit that unless their suggestions of capital structure are acceptable they are not certain in their own minds as to just how this allocation should be made; second, at the present time the primary problems presented by the plan are those of consolidation and determination of a sound capital structure for the consolidated enterprise.

However, in providing for an aggregate of approximately 5,000,000 shares of common stock, issuable at the time the reorganization is consummated, the committees have in mind that at least 2,000,000 shares should be distributed to the owners of the capital stock of the two railroad systems, or at least 40 per cent of the total number of shares of common stock to be issued at the time of the reorganization. This 40 per cent would be distributed one-half to the holders of capital stock of the Milwaukee, and the other one-half to the holders of capital stock of the North Western. While the committees do not provide for a specific allocation of such common stock as between the holders of the present preferred stock and common stock of the respective railroad systems, it is their purpose at some later date to suggest a specific allocation.

Management

The new company would be managed by a board of directors consisting of fifteen members, who would be elected by the holders of the preferred and common stock. It is suggested that a nominating committee serve to nominate the first board of directors. Members of this nominating committee would be appointed as follows: Two members by the Institutional Investors holding Milwaukee securities, one member by the Life Insurance Group Committee of the North Western, one member by the Mutual Savings Bank Group Committee of the North Western, one member representing labor to be selected by the labor organizations of the two railroads, one member by the board of directors of the Milwaukee, one member of the board of directors of the North Western, one member by the Preferred Stockholders' Committee of the Milwaukee, and one member by the Common Stockholders' Committee of the North Western.



Not less than eight directors would have residences in Chicago or any point west. At least one member of the board would represent the company's employees, one member would represent industrial shippers, one member would represent agricultural shippers and not more than three officers would be board members. The board of directors would elect such officers as they in their discretion would determine.

Labor

The committees "have great sympathy with the position of labor and hope that consolidation of the two railroads may be effected with as little disarrangement

of employment as possible." They contend that during the last ten years comparatively few new employees have been hired by either road; that at the present time employment is at a comparatively low rate; lapse of time will automatically necessitate the retirement of a number of the present employees of both railroads; and that in working out the consolidation any reduction in the number of men employed can be made out of those men who would normally be retired over the period of the next five to ten years.

Accordingly, the committee argues, it would follow that with an improvement in business and the necessity for rehiring employees now unemployed, it is entirely possible that the consolidation will be completed without any reduction in the number of employees of the new company as compared to those now employed by the two companies. In addition, operation of the Dismissal Wage Agreement, it is contended, which provides incomes to those employees who must of necessity be released through abandonment and co-ordination, will serve to reduce the hardship, if any, to be imposed upon labor by this plan.

Those employees who will continue to serve the new company will have the security of positions in a company whose financial stability will be unquestioned, according to the committee.

Applied for Reorganization in 1935

Both roads petitioned the federal district court in Chicago for authority to reorganize under section 77 of the amended Federal Bankruptcy Law in 1935, the North Western filing its petition on June 28 and the Milwaukee on June 29. The difficulties of the North Western, according to a statement by the directors, were attributed to a combination of causes. 1, the long continued depression; 2, four years of unprecedented drought in agricultural regions; 3, the great growth of unregulated and subsidized competitive forms of transportation; 4, high taxes imposed on railroads by state and local assessing bodies; 5, restoration of the 10 per cent wage decrease plus increases in the cost of materials and supplies due to the application of the codes in 1934.

The difficulties confronting the Milwaukee were to some degree a continuation of those that existed prior to 1927 when the Chicago, Milwaukee, St. Paul & Pacific was incorporated to take over the properties of the Chicago, Milwaukee & St. Paul under foreclosure. At that time the fixed charges of the company were reduced to what was thought to be a level corresponding to traffic at that time. Since 1928, however, the business of the company has decreased so that from 1930 to 1935 it failed to earn its fixed charges.

The North Western operates 8,364 miles of lines in Illinois, Wisconsin, Michigan, Iowa, Minnesota, South Dakota, North Dakota, Nebraska, and Wyoming. The Milwaukee operates 11,161 miles of lines in Illinois, Indiana, Iowa, Idaho, Michigan, Minnesota, Missouri, Nebraska, Montana, North Dakota, South Dakota, Wisconsin and Washington.

AN ASSOCIATION OF CZECHOSLOVAKIAN RAILWAY CAR MANUFACTURERS has recently been formed by six large manufacturing concerns. The association will divide both domestic and foreign railway car orders on an agreed basis and will attempt to standardize production. The agreement is to remain in force for ten years and will be supervised by the Control Office of Czechoslovak Railway Car Manufacturers, Prague. Dr. H. Ringhoffer, of the Ringhoffer-Tatra Works, has been elected as the first manager.

Passenger Traffic Officers Hold Annual Meeting

A NATIONAL railroad week to stimulate interest in railroads and travel was endorsed by members of the American Association of Passenger Traffic Officers at its annual meeting at Chicago on October 26 and 27. As a result, a committee was appointed to work with territorial committees in formulating a definite plan which can be submitted to the railroads through the Association of American Railroads. J. W. Switzer, general passenger agent of the New York Central, in suggesting a national railroad week, called attention to a lack of railroad consciousness due to an increasing use of private automobiles, contending that a national railroad week would be an effective means of telling the public what the railroads mean to them and are doing for them. With 25,000,000 passenger automobiles averaging 11,000 miles per year there is an opportunity for the railroads to recapture passenger revenue of a substantial amount, he said. Among the suggestions for possible inclusion in a program for a railroad week were bargain rates, low round-trip coach rates, a rate for two persons traveling together, an advertising program, exhibits, essay contests, plant inspections, and special events of a "ballyhoo" nature to stimulate public enthusiasm.

The principal speakers at the meeting, over which President O. P. Bartlett, passenger traffic manager of the Southern Pacific, presided, were Fred W. Sargent, president of the Chicago and North Western, and William M. Jeffers, president of the Union Pacific, who addressed the members at a banquet. Mr. Sargent commended the passenger departments of the railroads for their accomplishments in merchandising railroad passenger service during recent years. He also called attention to the general railroad problem, emphasizing the necessity for an about-face in the attitude of the public towards the railroads, the need for relief from restricted control and the need for a free hand to compete for all kinds of traffic.

Mr. Jeffers criticized complicated passenger tariffs and advocated a simplified rate structure. As a result, a committee was appointed to study passenger tariffs with a view to their simplification. Mr. Jeffers also advocated mass passenger transportation which could only be induced, he said, by fares low enough to encourage travel.

Officers elected for the ensuing year are, president, James W. Switzer, general passenger agent of the New York Central; vice-president, C. C. Bonter, passenger traffic manager of the Canada Steamship Lines, Ltd.; and secretary, re-elected, B. D. Branch, general passenger agent of the Central of New Jersey.

New Equipment Secures Passengers

A discussion of recent developments in equipment showed that modern equipment has stimulated traffic. It also disclosed a new trend in travel wants. Patronage of the Broadway Limited of the Pennsylvania and the Twentieth Century Limited of the New York Central have increased materially since the trains were re-equipped, that of the Century increasing 61 per cent. Present earnings of the Rockets of the Chicago, Rock Island & Pacific indicate that the trains will be paid for within three years. The cost of operating these trains is 56 cents a mile. Another recent development in equipment is the rebuilding of the cars of the Capitol Limited of the Baltimore & Ohio so that their outward appearance will emulate streamlined trains and their interiors will be replaced with modern fixtures.

A trend in travel requirements was indicated in the

patronage of room cars. The favorable acceptance of roomette cars has resulted in an increase from 1 roomette car a year ago to 50 at the present time. In eight months from January to August, 1938, 48,000, or 68 per cent of the 71,000 roomettes, available in these cars, were occupied. On the Century, out of 11,000 roomettes available in September, 76.3 per cent were occupied. Master bedrooms on the Century and the Broadway have been well received. Patronage of higher priced space has continued, indicating that the roomette car has not drawn from higher priced accommodations. As a result of the popular acceptance of the new room accommodations, it was suggested that the Pullman Company spend no more money in developing light weight, open section equipment.

Another topic of vital interest was the development of passenger traffic and revenues. Among the subjects discussed were salesmanship, methods of solicitation, the value of extra fares from coach passengers on fast trains, commissions to ticket sellers to stimulate their efforts and the value of meetings with conductors and ticket agents. The Erie Railroad has compiled a manual of instructions for passenger conductors and a man must pass an examination on forms and accounting with a grade of 75 before he is promoted to a conductor.

The Pullman Company on December 1 will install a new arrangement for selling sections in standard cars, the new rate being 1⅓ times the rate for a lower berth instead of 1.4 times as at present. The method of selling sections in sleeping cars will also be changed. Instead of tickets for sections being sold in ticket offices, berths only will be sold and conductors may sell the uppers to persons occupying the lower for sectional use if not required for separate occupancy. The practice will be adopted in order to keep uppers available for persons desiring these accommodations.

Another new practice which will be inaugurated by the Pullman Company on December 1, is a new arrangement for accommodating blind persons traveling with trained dogs. Such persons may buy a berth or a seat in a drawing room or compartment or other enclosed space at the regular berth or seat rate when a room is available. The practice is intended to eliminate the presence of dogs in the open part of cars. After December 1, bedroom suites joined by folding partitions or sliding doors will be sold at rates not to exceed the rate for a drawing room.

Competition Still Keen

A report of the committee on motor coach service and competition showed that there was no material difference in the number of inter-city buses operated or in the number of miles of highway routes which total about 345,000 miles, during the last year. There was a reduction of about 15 per cent in the number of inter-city bus companies but this was accounted for largely by consolidation. The number of inter-city buses in operation continued to stand at about 25,000, with a total of 130,600 buses of all character, including 78,000 school buses and 25,000 city buses. The number of city buses in service has increased from 16,000 in 1932 to 25,000 in 1937 and the number of school buses has increased during that period from 59,000 to 78,000. The magnitude of the entire bus industry was indicated by the fact that during 1937, 3,500,000 passengers were handled, with total revenues of $500,000,000. Of the latter, $300,000,000 was collected by the inter-city bus lines.

There has been a constant improvement in the type of buses in operation and the outstanding feature in the industry this year is air-conditioning. At the present time there are about 300 air-conditioned buses in the U. S.

The Interstate Commerce Commission has passed on about 90 per cent of the "grandfather" applications submitted to it and, with an increased appropriation by Congress, is now perfecting its organization for enforcing compliance with the Motor Carrier Act. This is expected to result in benefits both to the bus industry and to the railroads as it will stabilize the bus industry and prevent, to a large extent, so-called "wildcat" operations.

There was only a nominal increase in the number of bus route miles operated by railroads in 1937 as compared with 1936, but reports to this committee indicate that an increasing number of railroads are making arrangements with bus companies for co-ordinated transportation, principally affecting branch-line service. The notable developments now in progress in the manufacture of bus equipment consist of the use of lighter materials to bring about increased capacity of equipment, a probable perfection in Diesel power plants and the use of a gearless drive which will eliminate noise and vibration.

The outstanding item of interest in connection with the development of commercial aviation, according to the report of the committee on commercial aviation developments, has been the establishment by the government of the Civil Aeronautics Authority and the Air Safety Board. Until the passage of the Civil Aeronautics Act by Congress, which became effective August 22, 1938, the only regulatory bodies for the air lines were the Bureau of Air Commerce of the Department of Commerce, the Post Office Department and the Interstate Commerce Commission. The Act has created a number of new conditions under which the air lines are now obliged to operate, which apparently, make them as highly regulated as the railroads. As a result, passenger fare tariffs must be filed with the authority, passes or reduced rate transportation can be issued only to directors, officers, employees and their immediate families, carriers must receive certificates from the authority before being permitted to engage in air transportation, and air carriers desiring to complete consolidations, mergers, leases or purchases, must first obtain approval of the authority. The Safety Board now makes rules and regulations governing notifications and reports of accidents, investigates all accidents to air-craft and reports the probable cause, makes recommendations to the authority to prevent similar accidents in future, and conducts special studies and investigations pertaining to safety and air navigation.

During 1937 the air lines flew 76,996,163 miles, an increase of 3,692,327 miles over 1936. The number of passengers carried reached a new high of 1,267,580, or 119,611 more than in 1936. Of the seat space available, however, only 57.55 per cent was sold, compared with 64 per cent in 1936. Express handled showed an increase of 564,067 lb. over the previous year, with a new high of 8,914,067 lb. Mail carried reached a new high of 19,553,543 lb. in 1937, an increase of 1,229,531 lb. over the previous year. There was an increase of 44 municipal airports, making a total of 784. However, there was a decrease of 21 in the number of commercial airports, the total in this classification now being 432, as of July 1, 1938.

There were only 50 accidents of all kinds, compared with a total of 70 in 1936. Of the accidents during 1937, 6 were fatal, compared with 10 in 1936. Passenger fatalities, however, showed an increase of 5, being 51 in 1937 and 46 in 1936. Of all flights started in 1937, 95.4 per cent were completed, compared with 95.6 per cent in 1936. During 1937 a total of 386 airplanes were operated on scheduled airlines in the United States, an increase of 6 over 1936.

$445,000,000 Drop in Railway Purchases

BASED on information from 77 companies, Class I railroads purchased in August materials, supplies and fuel, exclusive of equipment, totaling approximately $46,088,000, or approximately $4,160,000 more than the revised totals for July. The purchases during August were the largest in six months, although the total was only half that for August, 1937, and was less by $1,214,000 than in August, 1933. Approximately $2,613,000 of the increase in August over the preceding month was in storehouse materials; there was also a slight increase in the receipts of rail.

The purchases of materials, fuel and equipment during the first eight months of the year totaled approximately $404,875,000, including $218,443,000 of materials, exclusive of fuel and equipment, from manufacturers, and $35,683,000 of locomotives and cars ordered from equipment builders, a total of $253,126,000 of materials and equipment, exclusive of fuel, from manufacturers. The remaining $150,748,000 was for fuel.

Purchases of materials, exclusive of fuel and equipment, from manufacturers during the eight months were less by approximately $279,033,000, or 56 per cent, than in the corresponding period of 1937 and less by approximately $129,775,000, or 37 per cent, than in the same period of 1936. They were only approximately $58,844,000 more than in the first eight months of 1933.

Railway Purchases—First 8 Months of Year

	Materials* received from manufacturers (000)	Equipment ordered from-manufacturers (000)	Total from manufacturers (000)	Fuel (000)	Total including fuel (000)
1929	$647,701	$269,522	$917,223	$226,399	$1,143,622
1930	548,446	125,847	647,293	209,954	884,247
1931	341,864	23,642	365,506	164,136	529,642
1932	187,700	2,049	189,749	118,000	307,749
1933	159,599	3,810	163,409	116,940	280,349
1934	287,590	57,484	345,074	138,065	483,139
1935	243,340	23,143	266,483	156,210	422,693
1936	348,218	105,992	454,210	168,326	622,536
1937	497,476	163,388	660,864	188,695	849,559
1938	218,443	35,683	253,126	150,748	404,875

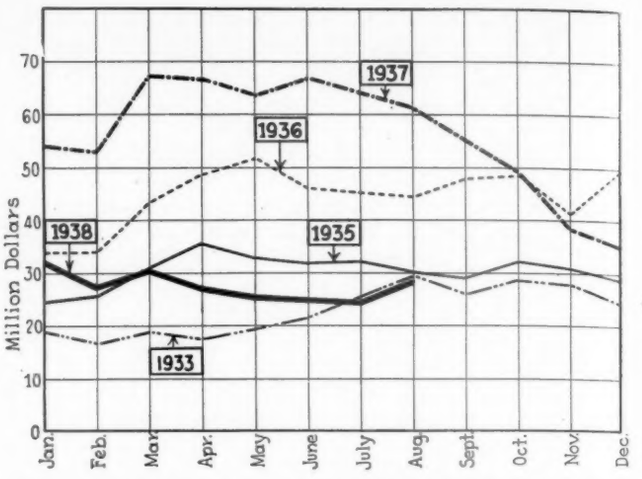
*Includes rail and forest products.
Revised to October 24, 1938.

Railway Purchases—Materials and Supplies

	Fuel (000)	Rail, New & S. H. (000)	Cross-ties (000)	Other Material (000)	Total (000)	Total Less Fuel (000)
Jan., 1938	$21,879	$1,379	$3,962	$26,008	$53,228	$31,349
Feb., 1938	20,027	1,947	3,808	21,459	47,241	27,214
Mar., 1938	19,953	2,343	3,975	23,573	49,844	29,891
Apr., 1938	18,413	2,232	3,539	21,268	45,452	27,039
May, 1938	17,113	2,269	3,598	19,932	42,912	25,799
June, 1938	17,334	2,285	3,323	19,557	42,499	25,165
July, 1938	17,189	1,587	3,099	20,053	41,928	24,739
Aug., 1938	18,841	1,446	3,117	22,684	46,088	27,247
Aug., 1937	21,234	2,787	6,027	52,872	82,920	61,686
8 Mos. 1938 ...	150,748	15,488	28,422	174,533	369,191	218,443
8 Mos. 1937 ...	188,695	35,926	40,190	421,360	686,171	497,476

Revised to October 24, 1938.

Orders placed with equipment builders for locomotives and cars, exclusive of equipment built in railroad shops, in the first eight months fell below the corresponding total in 1937 by approximately $127,500,000 and were less by $70,300,000 than in the same period of 1936



Trend of Monthly Purchases of Materials and Supplies, Exclusive of Fuel and Equipment, from Manufacturers.

while the combined purchases of materials and equipment, exclusive of fuel, from manufacturers showed a decline of approximately $407,738,000 from the corresponding total in 1937 and a decline of approximately $201,084,000 from the total for the same period of 1936.

The combined purchases of materials, fuel and equipment during the first eight months of 1938 showed a decline of approximately $444,684,000 or 52 per cent from the corresponding total in 1937 and a decline of approximately $217,661,000 or 35 per cent from the equivalent total in 1936, although they were larger by approximately $124,526,000 or 45 per cent in dollar volume than in the same period of 1933.

Continued decline in inventories was reflected in the August figures, although the progress in liquidating surpluses which accumulated in 1937 has been impeded by lack of funds to carry out program works for which most of the surplus is being held. The aggregate value of materials on hand, amounting to $337,578,000 on September 1, was approximately $7,135,000 less than on August 1, and showed a decline of approximately $47,477,000 from January 1, which is equal to about half of the increase in inventories which occurred in 1937.

Materials on Hand

	Fuel (000)	Rail, New & S. H. (000)	Cross-ties (000)	Other Material (000)	Scrap (000)	Total (000)
Jan. 1, 1938 ..	30,499	30,333	59,015	255,713	9,495	385,055
Feb. 1, 1938 ..	31,453	31,820	66,153	245,887	8,075	383,388
Mar. 1, 1938 ..	28,822	32,238	68,558	244,454	7,979	382,051
Apr. 1, 1938 ..	27,847	34,644	73,280	236,512	8,098	380,381
May 1, 1938 ..	25,223	34,076	71,583	283,876	7,336	374,094
June 1, 1938 ..	22,391	33,504	65,020	233,634	9,396	363,945
July 1, 1938 ..	22,568	33,007	63,271	227,136	9,276	355,258
Aug. 1, 1938 ..	22,099	30,896	60,016	222,111	9,591	344,713
Sept. 1, 1938 ..	22,220	30,002	63,814	215,171	6,371	337,578
Sept. 1, 1937 ..	32,619	35,819	51,595	253,583	6,810	380,426

Revised to October 24, 1938.

MARTIN BARROW, OF THE JAMAICA GOVERNMENT RAILWAY, Buff Bay, Jamaica, British West Indies, has furnished an interesting item from the Daily Gleaner of Kingston, Jamaica, on the opening of the railway. This first of all the British colonial lines was opened amid much pomp and ceremony on November 21, 1846. The governor of the colony, several lords and nobles, as well as the entire First West Indian regiment, including its band, all participated and rode the first train, which ran the length of the railway, nearly 12 miles, "in the startling speed of 25 minutes."

Roads Considering Wage Report

Meet in Chicago to act on Emergency-Board recommendation that reduction notices be withdrawn

WASHINGTON, D. C.

ACTING promptly upon President Roosevelt's October 31 request for an early report on railway management's attitude toward the Emergency-Board findings recommending withdrawal of the 15 per cent wage cut notices, J. J. Pelley, president of the Association of American Railroads, late the same day, called the meeting of A.A.R. member roads, which was held in Chicago on November 4.

Meanwhile, Mr. Pelley and George M. Harrison, chairman of the Railway Labor Executives' Association, who made separate calls at the White House on Monday, emerged from such conferences to announce that the President feels quite hopeful that his recently-appointed committee-of-six will bring in recommendations for constructive legislation, which will receive the full support of the Administration. The President named this committee-of-six, consisting of three railway executives and three labor leaders, on September 20, assigning it to work on the broad general aspects of the railroad problem while the wage-cut "detail" ran the normal course through the Emergency-Board proceedings. Present members of the committee, which Mr. Pelley said the President had intimated might be enlarged, are: Carl R. Gray, chairman of the Union Pacific; M. W. Clement, president of the Pennsylvania; E. E. Norris, president of the Southern; R. L. E. A. Chairman Harrison; D. B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen, and B. M. Jewell, president, Railway Employees' Department, American Federation of Labor. Deliberations, suspended on September 21 because the labor members would be "fully occupied during most of October" on the wage case, were expected this week to be resumed within a week or ten days. As he left the White House on Monday, Mr. Harrison said that he had assured the President that railway labor "would be happy to co-operate with the railroads and the government to fulfill the President's request."

The unanimous report of the Emergency Board, composed of Walter P. Stacy, chief justice of the Supreme Court of North Carolina; H. A. Millis, retired chairman of the University of Chicago's department of economics, and James M. Landis, dean of Harvard Law School, was made public at the White House early on the afternoon of October 29, the board having taken most of the two-day time extension granted by agreement of both parties.

Board's Findings Summarized

The summary issued along with the report's full text set forth the findings as follows:

1. The wages of railway labor are not high even as compared with wages in other comparable industries.

2. A horizontal reduction of wages on a national scale would not meet the financial emergency of the industry, since the savings would not be distributed merely to the needy roads.

3. A wage reduction in the railroad industry would run counter to the trend of wage rates in industry generally.

4. The financial distress of the carriers which has obtained since October, 1937, when the last wage increases were granted, is as yet a short-term situation. As such, it cannot be regarded as grounds for a wage reduction especially in view of present indications of an improvement in the business of the carriers.

5. In the light of these findings, the Board concludes that the proposal of the carriers for a reduction of the wages of railway labor should not be pressed and recommends that the carriers withdraw and cancel the notices which would put such a reduction into operation as of December 1, 1938.

After the White House had made the report public, Chairman Stacy spoke briefly to the assembled reporters. The board, he said, "understands that the railroad problem is not solved—that it is still with us." He went on to note the finding that the wages of railroad labor are not high as compared with wages in other comparable industries, explaining that railroad labor includes not only train-service men, but various non-operating groups as well. "If we had only the train-service men alone," he went on, "a different figure might have been applied." Also, he added, "a horizontal reduction would be of small benefit to roads in distress."

The report, including its appendix, is a 75-page document which opens with a brief introduction wherein it is revealed that after the close of public hearings the board "exerted every effort to obtain an agreed settlement, but without success." It then went ahead with the preparation of the report, "necessarily somewhat lengthy, yet too summary to do full justice to the matters on which evidence was taken and arguments heard." There follows in turn a discussion of the issues and a survey of wage movements and wage controversies in the railroad industry. In the latter connection the record is found to leave "some doubt as to where the present movement of the carriers to reduce wages by 15 per cent arose," although possibilities in that connection "seem to have been explored" prior to the Interstate Commerce Commission's Ex Parte 123 decision, and "not long after the filing of the carriers' petition for increased rates in that case." There is also a reference to last Spring's Washington meeting at which management sought the co-operation of labor on "some plan for relief;" but found the union leaders "willing to co-operate in many respects," while remaining "adamant in their refusal to consent to a reduction in wages."

The Condition of the Railroads

In considering the condition of the railroads, the report observes that the present situation "must be seen in the perspective of the last 17 years." It goes on to review the inroads of competing transport agencies and other traffic losses due to such factors as relocations of industrial plants and the production of hydroelectric power. It finds it "impossible to predict the future trend of this diversion of traffic save to recognize that active efforts will have to be made by the roads to hold even their present share of the nation's traffic to the rails." From this text comes a discourse on the need for "renewal and modernization of equipment and road," although the board passed no judgment "upon the question of whether the management of the roads, considering the limits of their resources, has kept pace as rapidly as it should

with the possibilities of improving productivity and service to the degree that science and invention has made feasible." Opinions on such a subject, it adds, "find expression too frequently from those whose want of information is no barrier to their desire to generalize."

Thinking that it would be relevant to review a few facts bearing upon the fixed charge situation, the report finds the relationship between fixed charges and operating revenue "more significant than total figures of bonded indebtedness and the ratio of those figures to capitalization." It goes on to quote Interstate Commerce Commissioner Eastman's Ex Parte 123 opinion to the effect that fixed charges "have continued to be a formidable menace in times of depression." And a solution of the fixed-charge problem, in the opinion of the board, "requires the type of probing consideration that has yet to be given to it." Its further suggestion is that "some mechanism more powerful than that now present in section 77, or other similar laws, is essential to effect better bases for compromise."

Although the board concedes in its discussion of past dividend payments that "it is easy to be wise in retrospect and from the pedestal of hindsight," it nevertheless asserts that the fact remains that benefits of such past disbursements "ran to ownership," as did those of surplus accumulations. It is recognized that the latter are "not like cash in the bank," but note is taken of labor's contention that surplus "inures always to the value of ownership despite the fact that it may be unavailable to meet the wage bill of labor in the lean years that now have followed."

Ownership Peaks Higher Than Labor's

"The peaks of ownership are higher and the valleys deeper than those that attend labor," the report continues. "The issue, therefore, still remains as to whether those valleys now are so deep and have been so long so barren as to make justifiable the claim of ownership upon labor for some aid to lift it nearer to the light of day. The hope held by the carriers with reference to their present move is not that it will afford a permanent answer to the problems outlined above. . . The move itself arises out of a present abnormally distressing condition and relates primarily to this condition."

Next in turn come reviews of the carriers' case as presented and the employees' defense. The railroad position, it is pointed out, "derives from the fact that the optimism which underlay the wage increases of 1937 has failed to bear fruit;" and while the employees recognize the plight of the carriers, they contend that the incidence of this condition should be made to lie with management. While the point was stressed throughout the hearing, the board found that the employees adduced "little that can be called evidence" to support their assertion that a railway wage cut would be followed by reductions in other industries. However, the report recognizes that this subject is one which must rest primarily on broad general observations of past wage movements.

Regulatory Set-up Needs Thorough Study

In setting forth its findings and recommendations, the board notes at the outset that it has no function "to point the answers, such as there may be, to the railway problem as a whole." Nevertheless the report does proceed to discuss several general matters, the first of which are the proposed legislative programs. In this latter connection the evidence before the board "impressed it with the necessity that now rests on government for a complete and thorough-going reconsideration of the relationship of the railroad industry to our national well-being."

"In 1920," it goes on, "a new attitude and a new approach to that problem was taken by the federal government in the light of its experience with the railroads during the period of federal control. Some of the hopes then held, indeed even written into the Transportation Act of 1920, have failed to bear fruit. Co-operation on a national scale by the carriers in and of the industry as a whole, has not been forthcoming to the extent that was then anticipated. Nor, men being what they are, is it likely to be forthcoming without effective implementation by the government. Since 1920 particular problems of the railroads have engaged the attention of the government, and changes, frequently of much importance, in regulative powers and attitudes have been made. But consideration of the problem as a whole has not engaged the attention of all those forces of industry and government that should have a deep concern with its issues and its implications. The demands made upon government in recent years with respect to other matters, important and deserving of the absorption of time and energy, have tended to leave the railroad problem in the background of our national thinking. But one dare no longer to let it rest there."

Also, the board was impressed with the fact that "both the carriers and railway labor have now a vital and common concern in the working out of an adequate, national transportation policy;" but it warns that "in some of the proposals that have been advanced, the public interest seems not to have been fully appreciated."

Discussing the "prevention of 'waste' as a substitute for wage reduction," the board notes that every industry, as government itself, "undoubtedly commits waste," adding that the elimination of such in the railroad industry will involve effort "over a period of years." With reference to the record of Senator Wheeler's rail-financing investigation, which was introduced as part of labor's case, the board said it "cannot rightly be asked to weigh voluminous testimony not taken before it and which is still in the process of being weighed and digested by that subcommittee." Next, the report suggests that issues which have given rise to labor's demands for "make-work" legislation should be settled through processes of collective bargaining.

Board Liked Hourly-Earnings Figures Best

The report's "Observations on Subsidiary Matters" considers first the relevancy of the increased productivity of labor and of the cost of living. In the former connection the board was unable to derive much aid from the data in the record, while it dismisses the cost-of-living angle with brief comment, closing with the observation that "all consumers as well as railway employees have benefited more or less from any substantial reduction in the cost of living over a period of years." Next comes a discussion of the comparative relevancy of average hourly, weekly, and annual earnings wherein the board, for reasons set forth, places "main reliance upon average hourly earnings when drawing conclusions concerning trends and comparative levels of pay." Also, it refers to the Railroad Retirement Board's compilation showing that of all railway workers who worked in each of six months or more in 1937, one quarter earned less than $911.

Coming to its discussion of "Determining Factors in the Case," the board observes: "How far decline in net income and reduction in the rate of return should justify wage reductions in an industry raises problems of vast import." There follows a discussion of "ability-to-pay" which in the judgment of the board must be viewed from

two aspects—the long-range standpoint and the short-range standpoint. The former is dismissed as a situation not before the board, because "we must start from the position that the wage agreements of 1937, which were voluntarily entered into by the carriers, were rested upon the judgment of the industry that the rates therein prescribed could be supported by the industry upon the prevailing volume of traffic or upon a volume not greatly higher." And the board finds no basis for concluding that the decline in traffic which set in just as last year's wage increases became effective "has been a permanent undermining of railroad revenues."

The foregoing leads the board to a consideration of the short-time aspect of "ability to pay," in which connection it observes that "it would be well to adhere to the principle that normally the shock of these crises must be taken up by ownership and not by the wage structure." Ownership, it adds, "is adapted to derive the benefits of sudden increments; it is equally right that it accept the burden of short crises." It is conceded, however, that the principle "has its limitations as applied to the present proceeding," where "there is for this crisis no fat upon which to feed." To this proposition, two answers are suggested—first, that the post-1930 declines in revenues are of a somewhat permanent nature. "To that situation the carriers will need to adjust themselves by means more heroic than wage reductions." Recent ratios of earnings to fixed charges "give some indication of the need that exists for adjustments on the part of capital."

Receiverships No Cause for Alarm

In the latter connection, the report goes on to suggest that "the unusual percentage of carriers now in receivership or trusteeship need not necessarily disturb one. It may, indeed, be desirable from a broad standpoint that the percentage should increase, provided only that the processes of reorganization will result in real and not make-shift readjustments. No sacrifices of note need be asked for to preserve values that already have been long dead and whose burial is now merely a matter of the proper amenities of finance." The latter carries a reference to a footnote which cites railroad investments of insurance companies and educational institutions, only to make the point that the presence of such holders "cannot afford justification for an effort to preserve nonexistent values."

The manner in which money realized from a wage cut would be distributed between the needy and the better-off roads made "obvious" to the board "the inequity of reducing wages on a national scale, when the railroads are operated on a number of lesser scales." It understands that differentiation in wage scales as between needy and prosperous roads "is not a feasible solution," but it thinks that "the ingenuity of management ought to be such as to be capable of devising ways and means, with or without the assistance of government, to distribute savings to be accrued from reductions in the wages of railway labor in conformance with the necessitous needs of the carriers when the very basis of the plea for wage reduction founds itself upon necessity."

After next reviewing comparative wage statistics and data on regularity of employment, the board concludes that "the carriers' proposal can derive no sustenance from the contention that railway wages as a whole are too high." This observation closes the discussion of the problem from the standpoint that the "carriers' inability to pay is characterized by a short-term aspect." If, as may eventuate, this inability to pay becomes a long-time aspect the board concedes that "avenues of relief through wage reductions would have to be explored." It suggests that "the 30-day clause of the existing agreements would provide this opportunity" as it goes on to advise the railroads as to how they should proceed if such a situation arises. First the board recalls its above-mentioned comment on the failure of a national horizontal proposition to distribute the benefits of savings to the needier roads. Then it cites a "further defect" in that the incidence of such a proposal falls upon all classes of employees in such a way that "better paid and less well paid would fare alike." Also, there was no plan to earmark the expected savings for specific ends.

Taking note of the suggestion that last year's increases might be suspended "for a period of time, more or less dependent upon the volume of traffic," the board thought such action would introduce "a somewhat inequitable element." It goes on to explain that the 1937 increases, being on a cents-per-hour basis, reduced the differentials in favor of the higher-paid employees; and to suspend would be to operate "according to the analogy of regressive rather than progressive taxation—making the burdens fall with undue weight upon those least able to meet them." Future consideration of savings in labor cost, the board next observes, might focus upon operating rules "that call for pay not commensurate with the amount of additional benefit rendered."

Finally, the board observed that "hardly more important problems face management today than the handling of their relationships with labor," which handling "demands the best effort and the best talent that the management and men can give." And the "testimony in this case with regard to the pursuit of penetrating and thoughtful inquiry by the highest executive officials in the railroads prior to concluding to press the present proposal for wage reductions, has not been impressive." If the board were to analogize its function to that of a review court it would be "justified in reversing the conclusion of the carriers and remand the case for redetermination in the light of more thorough exploration." But the board did not press the analogy—it had other reasons for concluding "that no horizontal reduction upon a national scale should be pressed by the carriers at this time."

Enochs Disappointed; Harrison Satisfied

Meeting the press shortly after the report was made public, H. A. Enochs, chairman of the Carriers' Joint Conference Committee, said he felt that the board "acted conscientiously and portrayed the situation as they viewed it." The railroads, he added, "had a fair trial," although he thought it "needless to say" that "we're disappointed;" and that "the problem is still with us." Meanwhile R. L. E. A. Chairman Harrison was preparing a statement which he issued late Saturday evening, praising the report and restating labor's disposition to cooperate "in working out a sound comprehensive program for the improvement and betterment of the railroad industry." Labor's resistance to the wage cut, he went on, was based on "conviction of its injustice," but such resistance was "without bitterness and always with the profoundest concern for the public good and devotion to the industry in which we have spent our lives and which is so vital to the nation's welfare."

When he announced the November 4 meeting of member roads on Monday afternoon, A. A. R. President Pelley, along with Mr. Enochs, held an informal press conference. There Mr. Pelley emphasized the fact that the member-road meeting was being held at the earliest possible date in order to meet the request of the Presi-

dent for a report on management's attitude. He thought that the President's railway committee-of-six would resume its deliberations sometime next week, but he recalled his testimony before the Emergency Board to the effect that no plan which could be devised would preclude the necessity for a wage cut. Also, Mr. Pelley called attention to the "Railroad Program" which was made public along with the report of President Roosevelt's previous railroad committee, consisting of Interstate Commerce Commission Chairman Splawn and Commissioners Eastman and Mahaffie.

Reports were abroad this week that plans were underway to loan large sums of government money to the railroads, but Mr. Pelley said he knew of no such proposal; neither, he added, does Chairman Jesse H. Jones of the Reconstruction Finance Corporation. Meanwhile Mr. Enochs told the reporters that "there is no reason for anyone to get excited about having a railroad strike." He thought that his committee's power of attorney gave it authority to accept or reject the board's report, but he does not believe they will undertake to decide that matter of policy. As Mr. Enochs saw it there is nothing left for his committee to do but recommend its own discharge; this he anticipated they would vote to do at a meeting in Chicago on November 3, one day before the member-road meeting.

It was Mr. Enochs' view that if individual roads decided to proceed with a wage cut they could do so at the expiration of the present 30-day period, and without taking a new case through negotiation, mediation and another emergency-board proceeding. R. L. E. A. Chairman Harrison disagreed. He maintains that the present case was prosecuted on an "institutional" basis, and that if any roads now wish to reduce wages, they would have to begin at the beginning of Railway Labor Act procedures. On November 1 came a statement from the American Federation of Labor which could not "compliment too highly the cogent reasoning of this board." R. L. E. A., it added, "deserves the highest praise for the admirable way in which it has conducted the negotiations in behalf of railway labor. If management, in the face of favorable business developments, persists in the foolhardy course of going through with the pay cut, railway labor has no recourse but to strike. In such a strike, railway labor will have the complete support of the American Federation of Labor to the full extent of its resources."

At his November 1 press conference President Roosevelt refused to comment on his conferences with Messrs. Pelley and Harrison, although he did say that he expected his committee-of-six to reconvene without a call from him within a few days.

Communication . . .

Selling Tickets "On Time" Would Stimulate R. R. Travel

SEATTLE, WASH.

TO THE EDITOR:

A recent incident in my neighborhood has caused me to consider a plan that will provoke thought and possibly a trial by some progressive railroad in its passenger department.

It was necessary for a friend and customer of mine (I am a retail grocer) to leave Seattle for a period of six weeks. The nature of his business is such that his wife and child could not accompany him. This family would have liked to have arranged a trip home to Boise, Idaho, for the mother and baby, but did not have sufficient cash on hand to finance it; neither was the occasion serious enough to borrow the money. While the train fare is not a great sum, it was more than could be afforded at that time. This man has a steady position with a decent salary and the best of credit references. Assuming that the round-trip fare is $40, he would have gladly made a deposit of $10 and then paid the balance at the rate of $10 a month.

No such plan is now available to the general public—hence this family stayed at home. Incidentally this party remarked that it would have been cheaper to send his family to Boise by train than to have them stay in Seattle for six weeks, not considering the enjoyment derived from a visit with relatives and old friends.

Any other retail organization offering either services or merchandise for sale to the general public would have been glad to get this business.

Sell on Installments—or Not at All

Reliable statistics tell us that 85 per cent of the people have an income of less than $2000 yearly. A large majority of these people are buying electric refrigerators, furniture, or automobiles on time-payments and consequently are unable to accumulate any great sum of money. Further statistics tell us that more than 95 per cent of the people pay their bills without any appreciable collection effort and an efficient collection department will collect 85 per cent of those few accounts falling into the slow class.

Literally speaking, a trip by private car is financed on the installment plan. Later payments come in the form of depreciation, insurance and car repair.

For obvious reasons round-trip tickets selling for $10 or more would be the only ones offered to the public under this plan. Rates could be 5 per cent higher than the cash fare without affecting the volume of sales. Rates and application blanks would be furnished agents for distribution to the public. Agents would accept properly completed applications with deposit and, in the case of smaller towns, investigate and report to the nearest office. Experienced credit men in these central locations could accept or reject applications according to the information at hand. Approval or rejection could be obtained within 24 hours of request for ticket. Rejection slips with different reasons for same would be furnished agents. A mark beside the reason applicable to the case would be sufficient on rejected applications. Experience has shown that less than 8 per cent of all applications for credit received are found to be unacceptable. The agent would not be drawn into any controversy on this score as approval or rejection would not rest with him.

Anything (Except R. R.)

Advertising stressing the fact that "if your credit is good at your local department store, it is good for a round-trip ticket to ——" would appeal to the great number of people having accounts with this type of store. Future ads appealing to customers of other lines of business could be used.

If the person reading this article will reflect for a moment, the possibilities of this plan will become evident. Wouldn't your secretary be a prospect, or most any of the employees in your office?

Please remember that at the present time there is no service or article of merchandise offered for sale to the public at a cost of $10 or more that cannot be bought on time-payments.

The present passenger equipment now on hand is undoubtedly sufficient to accommodate the increase in traffic that could be expected as the result of the trial of this plan. Under these conditions the administrative expense and cost of advertising would be the only items requiring an outlay of capital to secure this additional traffic.

In closing, a word about the writer is in order. Fifteen years of successful business experience has given me a good idea of what can be sold to the public and later collected for. I am well established in a profitable business of my own and have no thought of personal gain in putting forth this plan.

IRVIN J. SAUNDERS

NEWS

S. A. L. to Begin Diesel Service

Public views this road's new motive power for Orange Blossom Special

The Seaboard Air Line presented to the public on October 31 at the Union Station in Washington, D. C., the first of its new 6,000-hp. Diesel-electric locomotives which will be used to haul the line's Orange Blossom Special from Washington to Miami, Fla. The train, which was open to the public during the entire day, is composed of the three sections of the locomotive, three Pullmans, one coach, one diner and one combination passenger and baggage coach, all newly refitted.

At the dedication ceremonies held at noon, L. R. Powell and Col. Henry W. Anderson, receivers of the road, received the locomotive from the Electro-Motive Corporation. Also present for the occasion from General Motors and the Electro-Motive Corporation were Charles F. Kettering, vice-president of General Motors Corporation; H. L. Hamilton, president of the Electro-Motive Corporation; R. K. Evans, vice-president of General Motors and Frank H. Prescott, vice-president and general manager of the Electro-Motive Corporation. The new Diesel-electric was christened by Mrs. Fred P. Cone, wife of the Governor of Florida. C. E. Bell, passenger traffic manager of the Seaboard, acted as chairman at the christening, which was broadcast over a network of the National Broadcasting Company.

After the dedication ceremonies a luncheon was held at the Mayflower Hotel, which was attended by executives of the road, representatives of the Reconstruction Finance Corporation, high ranking government officials and members of the transportation fraternity in Washington.

According to an announcement by the railroad, the new 6,000-hp. Diesel-electric streamlined locomotives, built by the Electro-Motive Corporation, are the longest and most powerful yet designed. Each locomotive comprises three 2,000-hp. units coupled together, and operates from a single control station in the leading unit. In turn, each of the 2,000-hp. units is composed of two 1,000-hp. Diesel-electric power plants.

The complete locomotive is 210 feet long, 13 ft. 11 in. high, 9 ft. 10 in. wide, and, equipped for service, weighs 900,000 lb. Each of the three units carries 1,200 gal. of fuel oil, and 1,100 gal. of water to cool the engines and heat the train. During the entire run from Washington, D. C., to south Florida, fueling stops will be made only twice—at Hamlet, N. C., and Wildwood, Fla.

Each of the six Diesel engines drives a 600-volt d.c. electric generator. The current from the generators powers the electric motors—two of which are mounted on each of the six-wheel trucks, making twelve motors for each three-unit locomotive.

The locomotive which was dedicated on October 31 was the first of three such locomotives which have been ordered and which will be used to pull the East Coast Orange Blossom Special from Washington, D. C., to Miami, Fla. Service will be inaugurated on December 15, with through passengers from New York being able, for the first time, to travel the entire distance to Florida resorts on trains powered by electricity. The Pennsylvania's electrics will pull the train to Washington where it will be turned over to the new Diesel-electrics.

9 Months N. O. I. $205,073,657

1.1 per cent return compares with 2.54 per cent in like 1937 period

Class I railroads in the first nine months of 1938 had a net railway operating income of $205,073,657 which was the annual rate of return of 1.1 per cent on their property investment, according to the Bureau of Railway Economics of the Association of American Railroads. In the first nine months of 1937, the net railway operating income was $470,829,505 or 2.54 per cent on their property investment, and in the first nine months of 1930, it was $648,115,287 or 3.44 per cent.

CLASS I RAILROADS—UNITED STATES

	1938	1937	1930
Month of September			
Total operating revenues	$322,594,889	$363,070,853	$462,209,448
Total operating expenses	232,040,185	262,711,697	316,494,334
Taxes	29,343,887	29,641,922	31,238,205
Net railway operating income	50,361,823	59,621,184	102,852,390
Operating ratio—per cent	71.93	72.36	68.47
Rate of return on property investment—per cent	1.70	2.02	3.39
Nine Months Ended September 30			
Total operating revenues	$2,574,031,809	$3,174,641,589	$4,035,083,343
Total operating expenses	2,015,858,740	2,356,057,511	3,018,212,919
Taxes	255,625,988	249,224,346	271,435,608
Net railway operating income	205,073,657	470,829,505	648,115,287
Operating ratio—per cent	78.32	74.21	74.80
Rate of return on property investment—per cent	1.10	2.54	3.44

The September net railway operating income was $50,361,823 or 1.7 per cent as compared with $59,621,184, or 2.02 per cent in September, 1937, and $102,852,390 or 3.39 per cent in September, 1930.

Gross operating revenues for the first nine months of 1938 totaled $2,574,031,809 compared with $3,174,641,589 for the same period in 1937 and $4,035,083,343 for the same period in 1930, a decrease of 18.9 per cent below 1937, and 36.2 per cent below 1930. Operating expenses amounted to $2,015,858,740 compared with $2,356,057,511 for the same period in 1937, and $3,018,212,919 for the same period in 1930; operating expenses for the first nine months of 1938 were 14.4 per cent less than in the same period of 1937, and 33.2 per cent below 1930.

Class I roads in the first nine months of 1938 accrued $255,625,988 in taxes compared with $249,224,346 in the same period of 1937, and $271,435,608 in the same period of 1930. For September, tax accruals amounted to $29,343,887, a de-

(*Continued on page 682*)

Rock Island Subsidiary Seeks to Acquire Truck Line

The Rock Island Motor Transit Company, subsidiary of the Chicago, Rock Island & Pacific, has asked the Interstate Commerce Commission for authority to acquire certain operating rights of Harold L. Clark, doing business as Clark Transportation, Kansas City, Mo.

Acme Order Postponed

The Interstate Commerce Commission has further postponed from October 31 to December 1 the effective date of its order in the case involving the status of Acme Fast Freight, Inc. The commission's report in this case, which held that forwarding operations were left unregulated under the Motor Carrier Act, was reviewed in the *Railway Age* of July 23, page 166.

I. B. A. Asks Roads To Go Trucking

Suggests R. E. A. run nation-wide fleet; urge "agreed charges" plan

Suggestions that the railroads go into the motor truck business on a nation-wide scale; that the roads be permitted to quote rates on the "agreed charges" plan and that the Railway Labor Act and working rules be changed so as to ease labor burdens, were the most outstanding of a group of suggestions set forth in the report of the Railroad Securities committee of the Investment Bankers of America submitted during the convention of the organization at White Sulphur Springs, W. Va., on October 28. While the committee realized that the critical condition of the carriers is due in large part to lack of traffic caused by lack of business in industry, nevertheless, it was of the opinion that "certain unfavorable long-term difficulties have been gradually stifling the industry;" it is to correct these that the suggestions to follow were laid on the table.

The report first urges the passage of legislation to permit the roads to adopt the "agreed charges" system of rate-making, which has been in successful operation for some years in Great Britain, France and Australia, and has been approved, with certain modifications, in the Canadian Transport Act of 1938. "Agreed charges," the report explains, consists of a special rate granted by the carrier in return for a specified amount of the individual shipper's business. As such, the committee believes they would help defend the railroads from highway competition, which, in its opinion, is, and probably must be, largely unregulated, regardless of the Motor Carrier Act of 1935. The report further points out that the agreed charges must be approved by the regulatory bodies (in this country the I. C. C.) after public hearings.

The report then quotes an explanation of the "agreed charges" plan from the official brief of the Railway Association of Canada in recent hearings on the plan, and recommends such a measure for the United States in the belief that: "If a new system of rate-making, which seems to offer adequate safeguards to protect the public, could restore to the railroads a large volume of the traffic which has been taken away by their competitors, due, at least to an important extent, to the inflexibility of our rate-making mechanism, there would seem to be many advantages to the public as a whole."

The report also favors the elimination of land grant rates and the revival of the Pettengill bill.

Moving then to the subject of motor truck competition and road-rail co-ordination, the report first deplores that interpretation of the Motor Carrier Act by Division 5 of the I. C. C. which prevents the railroads from operating trucks in service beyond their own rail lines and competitive with their own railroad operations, as embodied in the recent decision involving acquisition of the Union Transfer Company by the Union Pacific, Burlington and C. & N. W. Criticizing Commissioner Eastman's concurring opinion in this decision, the report declares that a trucking combination backed by the responsible and ample financial interests of the railroads would give the shipper an improved brand of trucking service and that this action of the commission prevents the railroads from satisfying some of the chief complaints of the shippers against them. Some classes of shipments require less rigid packing conditions when handled by truck; mixed shipments, shipments requiring forwarding at irregular hours and small-lot shipments often go faster by highway, the report continues. Such needs can be met by the railroads only through the operation of a fleet of trucks, even though this involves competition with independent truck owners.

(*Continued on page 682*)

August Net Income Was $1,096,693

But net deficit for the first eight months of this year was $183,364,495

Class I railroads reported a net income, after fixed charges and other deductions, of $1,096,693 in August, as compared with a net income of $7,240,823 in August, 1937, according to the Interstate Commerce Commission's monthly compilation of selected income and balance sheet items. The net deficit for the first eight months of this year was $183,364,495, as against a net income of $65,331,929 for the comparable 1937 period.

Sixty-one roads reported net incomes for August, and 72 reported deficits; in August, 1937, there were 63 with net incomes

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 136 Reports (Form IBS) Representing 141 Steam Railways

(Switching and Terminal Companies Not Included)

TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of August 1938	For the month of August 1937	*Income Items*	For the eight months of 1938	For the eight months of 1937
$45,376,615	$50,756,742	1. Net railway operating income	$154,711,896	$411,208,316
11,172,638	11,057,193	2. Other income	91,065,356	96,125,654
56,549,253	61,813,935	3. Total income	245,777,252	507,333,970
1,837,999	1,718,572	4. Miscellaneous deductions from income	16,037,589	13,649,781
54,711,254	60,095,363	5. Income available for fixed charges	229,739,663	493,684,189
		6. Fixed charges:		
12,568,642	12,122,544	6-01. Rent for leased roads and equipment	86,198,130	100,068,696
39,825,950	39,506,126	6-02. Interest deductions	† 317,103,846	† 318,303,184
207,396	218,130	6-03. Other deductions	1,698,896	1,830,760
52,601,988	51,846,800	6-04. Total fixed charges	405,000,872	420,202,640
2,109,266	8,248,563	7. Income after fixed charges	* 175,261,209	73,481,549
1,012,573	1,007,740	8. Contingent charges	8,103,286	8,149,620
1,096,693	7,240,823	9. Net income	* 183,364,495	65,331,929
16,919,602	16,451,079	10. Depreciation (Way and structures, and Equipment)	134,740,433	130,317,463
1,788,388	3,540,320	11. Federal income taxes	8,888,517	25,382,351
		12. Dividend appropriations:		
8,764,992	14,708,457	12-01. On common stock	39,010,134	74,324,657
2,593,446	2,172,630	12-02. On preferred stock	9,166,383	13,097,099

Selected Asset Items	Balance at end of August 1938	Balance at end of August 1937
13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$653,807,733	$699,576,983
14. Cash	367,170,299	431,144,796
15. Demand loans and deposits	10,122,421	17,455,110
16. Time drafts and deposits	18,410,141	41,560,544
17. Special deposits	64,617,533	155,002,746
18. Loans and bills receivable	1,558,775	13,551,106
19. Traffic and car-service balances receivable	53,465,683	57,515,696
20. Net balance receivable from agents and conductors	44,462,987	53,579,153
21. Miscellaneous accounts receivable	127,728,224	138,931,764
22. Materials and supplies	337,511,029	380,425,708
23. Interest and dividends receivable	20,246,349	24,720,582
24. Rents receivable	1,430,777	1,977,140
25. Other current assets	6,122,287	8,465,211
26. Total current assets (items 14 to 25)	$1,052,846,505	$1,324,329,556
Selected Liability Items		
27. Funded debt maturing within 6 months ‡	$116,938,297	$81,469,198
28. Loans and bills payable §	246,548,948	210,648,782
29. Traffic and car-service balances payable	73,086,820	79,628,188
30. Audited accounts and wages payable	211,694,690	257,802,460
31. Miscellaneous accounts payable	62,613,571	98,298,620
32. Interest matured unpaid	761,260,284	608,888,260
33. Dividends matured unpaid	1,603,257	6,709,403
34. Funded debt matured unpaid	613,014,428	477,459,951
35. Unmatured dividends declared	11,744,862	15,890,136
36. Unmatured interest accrued	97,350,892	105,926,425
37. Unmatured rents accrued	32,238,398	33,743,395
38. Other current liabilities	22,994,407	22,356,212
39. Total current liabilities (items 28 to 38)	$2,134,150,557	$1,917,351,832
40. Tax liability (Account 771):		
40-01. U. S. Government taxes	$53,335,225	$115,935,213
40-02 Other than U. S. Government taxes	167,499,947	153,782,356

† Represent accruals, including the amount in default.

* Deficit or other reverse items.

‡ Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.

§ Includes obligations which mature not more than 2 year after date of issue.

NET INCOME OF LARGE STEAM RAILWAYS WITH ANNUAL OPERATING REVENUES ABOVE $25,000,000

(Switching and Terminal Companies Not Included)

Name of railway	Net income after deprec. For the eight months of 1938	Net income after deprec. For the eight months of 1937	Net income before deprec. For the eight months of 1938	Net income before deprec. For the eight months of 1937
Alton R. R.	*$1,355,766	* $576,273	*$1,131,695	* $340,159
Atchison, Topeka & Santa Fe Ry. System ¶	2,491,573	6,725,031	10,466,549	14,288,699
Atlantic Coast Line R. R.	* 959,499	2,660,139	424,610	4,011,916
Baltimore & Ohio R. R.	*12,864,962	* 123,949	* 7,984,973	4,690,127
Boston & Maine R. R.	* 2,830,199	482,960	* 1,753,601	1,556,407
Central of Georgia Ry.†	* 2,264,830	* 1,285,989	* 1,695,213	* 760,601
Central R. R. of New Jersey	* 2,683,922	* 1,063,167	* 1,740,470	* 106,994
Chesapeake & Ohio Ry.	9,696,925	21,863,913	15,230,210	27,367,486
Chicago & Eastern Illinois Ry‡	* 1,456,811	* 633,137	* 1,052,960	* 225,661
Chicago & North Western Ry ‡	*12,954,911	*11,485,901	* 9,576,907	* 8,164,736
Chicago, Burlington & Quincy R. R.	* 458,423	1,753,782	2,921,646	4,970,435
Chicago Great Western R. R. ‡	* 1,343,740	* 893,355	* 985,457	* 539,161
Chicago, Milwaukee, St. Paul & Pacific R. R. ‡	*14,547,654	* 9,407,361	*10,725,830	* 5,777,376
Chicago, Rock Island & Pacific Ry. ‡	* 9,158,123	* 6,831,162	* 6,388,543	* 4,124,047
Chicago, St. Paul, Minneapolis & Omaha Ry.	* 1,963,925	* 2,116,999	* 1,571,989	* 1,721,483
Delaware & Hudson R. R.	* 1,011,807	* 347,937	* 313,815	358,013
Delaware, Lackawanna & Western R. R.	* 3,400,342	* 220,087	* 1,753,214	1,457,709
Denver & Rio Grande Western R. R. ‡	* 5,207,784	* 4,877,745	* 4,383,843	* 4,111,226
Elgin, Joliet & Eastern Ry.	* 593,102	1,460,597	74,981	2,057,323
Erie R. R. (including Chicago & Erie R. R.) §	* 9,073,696	1,318,071	* 6,576,816	3,859,064
Grand Trunk Western R. R.	* 4,126,078	* 241,313	* 3,376,861	453,628
Great Northern Ry.	* 5,368,664	3,668,039	* 2,888,304	6,086,741
Illinois Central R. R.	* 1,792,533	* 2,128,807	2,537,888	2,033,536
Lehigh Valley R. R.	* 2,954,032	* 974,612	* 1,507,892	529,133
Long Island R. R.	* 1,186,974	* 1,183,441	* 402,738	* 403,656
Louisville & Nashville R. R.	* 279,244	4,927,158	2,608,882	7,700,909
Minneapolis, St. Paul & Sault Ste. Marie Ry ‡	* 4,913,246	* 3,996,228	* 4,093,435	* 3,210,938
Missouri-Kansas-Texas Lines	* 3,027,307	* 723,509	* 2,143,578	66,073
Missouri Pacific R. R.‡	*11,093,286	* 4,829,794	* 8,175,463	* 2,041,947
New York Central R. R.ø	*20,515,149	7,011,298	* 9,784,805	17,705,695
New York, Chicago & St. Louis R. R.	* 1,915,516	1,851,208	* 779,962	2,941,187
New York, New Haven & Hartford R. R.‡	* 8,353,499	* 3,913,782	* 6,087,405	* 1,651,303
Norfolk & Western Ry.	8,771,509	21,018,623	12,096,544	24,202,385
Northern Pacific Ry.	* 7,676,069	* 2,877,381	* 5,413,528	* 724,822
Pennsylvania R. R.	* 895,502	21,008,615	16,019,693	37,595,511
Pere Marquette Ry.	* 2,740,143	1,324,842	* 1,139,188	3,029,349
Pittsburgh & Lake Erie R. R.	615,939	3,195,416	2,112,725	4,383,679
Reading Co.	756,795	5,040,402	2,849,705	7,106,524
St. Louis-San Francisco Ry.‡	* 8,942,005	* 4,242,265	* 6,858,365	* 2,144,138
St. Louis Southwestern Lines‡	* 1,283,770	* 658,274	* 869,442	* 257,900
Seaboard Air Line Ry.†	* 5,341,934	* 2,873,215	* 3,981,121	* 1,578,709
Southern Ry.	* 4,014,927	1,323,024	* 1,975,106	3,412,214
Southern Pacific Transportation System‖	*10,355,834	383,793	* 4,837,124	5,742,823
Texas & Pacific Ry.	286,588	1,617,165	1,083,644	2,391,707
Union Pacific R. R. (including leased lines)	6,341,679	5,839,941	11,214,604	10,322,065
Wabash Ry.†	* 5,114,200	* 1,824,274	* 3,679,465	* 396,301
Yazoo & Mississippi Valley R. R.	* 345,343	264,012	11,459	589,650

† Report of receiver or receivers.
‡ Report of trustee or trustees.
§ Under trusteeship, Erie R. R. only.
¶ Includes Atchison, Topeka & Santa Fe Ry., Gulf, Colorado & Santa Fe Ry., and Panhandle & Santa Fe Ry.
ø Includes Boston & Albany, lessor to New York Central R. R.
‖ Includes Southern Pacific Company, Texas & New Orleans R. R., and leased lines. The report contains the following information: "Income reported hereon excludes offsetting debits and credits for rent for leased roads and equipment and bond interest, between companies included herein. Interest on bonds of, and rental income from, separately operated solely controlled affiliated companies, whether earned or not, are included in this statement, in order that such income credits will offset income debits reflected in the net deficit of such companies. Operations of all separately operated solely controlled affiliated companies, resulted in a net deficit of $4,598,375 for the eight months ended August 31, 1938, and $2,132,228 for the eight months ended August 31, 1937, which is not reflected in this statement."
* Deficit.

and 70 with deficits. For the first eight months of 1938 only 32 roads reported net incomes while 101 reported deficits; for the comparable 1937 period 71 had net incomes and 62 deficits. The consolidated statement and that showing the net income of roads having operating revenues above $25,000,000 are given in the accompanying tables.

Examiner Says Erie Does Not Violate I. C. C. Act

The agreements and arrangements between the Seaboard Terminal & Refrigeration Company and the Erie and the leasing, subleasing and renting of space in the Seaboard building at Jersey City, N. J., do not violate any provisions of the Interstate Commerce Act, according to a proposed report which Interstate Commerce Commission Examiner Homer C. King has recommended that the commission accept. He further recommends that the commission dismiss those portions of its investigation dealing with warehousing and storage of property by carriers at the Port of New York, N. Y., in so far as it affects these companies.

The commission had previously found that the Erie subsidized, granted concessions to, and assumed a portion of the cost of conducting the commercial operations of the Seaboard through leasing arrangements with that company, and that such leasing arrangements and rental rates paid thereunder gave undue and unreasonable preference and advantage to the Seaboard, worked unjust discrimination, undue and unreasonable prejudice and disadvantage to competing warehouse companies, and resulted in departures from the Erie's published tariff rates in violation of sections 2, 3, and 6 of the Interstate Commerce Act.

Greyhound Acquisition

The Greyhound Corporation has asked the Interstate Commerce Commission for authority to acquire control of the Eastern Michigan Motorbuses through the ownership of all of its capital stock. At the same time the Greyhound Corporation has asked the commission for authority to issue 145,000 shares of its common stock in exchange for the capital stock of the Eastern Michigan Motorbuses.

Status of R. F. C. Rail Loans

The Reconstruction Finance Corporation's monthly statement as of September 30, 1938, shows disbursements to railroads (including receivers) of $604,677,739 and repayments of $185,313,362.

C. of G. Mixed Train Derails

Derailment of Central of Georgia mixed train No. 78 at Holt, Ga. (19 miles west of Albany) on October 21, at 10 p.m., caused the death of the flagman; five passengers were slightly injured. A rail break due to multiple transverse fissures, caused the derailment of the train which consisted of 28 freight and 3 passenger-train cars and was proceeding at about 30 m.p.h. at the time of the accident.

Luminator Lights in the "Copper King"

The lighting fixtures used in the "Copper King," remodeled observation-lounge car for the City of Los Angeles, which was described in the October 15 issue of the *Railway Age*, were furnished by Luminator, Inc. Each fixture is equipped with a diffusing lens of the magnifying type, having a fine screen lining in the glass which keeps the interior of the light unit from being seen.

Modernized "Capitol Limited" to Be Exhibited November 21 and 22

Modernized equipment of the Capitol Limited operated by the Baltimore & Ohio between Chicago and Washington will be exhibited at Washington on November 21 and at Baltimore and Chicago on November 22. Equipment for the two trains is now being rebuilt as streamliners, and their interiors will include modern appointments. The two trains drawn by Diesel-electric locomotives will be placed in regular service on November 23.

Would Allow Santa Fe to Take Over Its Subsidiary

The Atchison, Topeka & Santa Fe would be authorized to purchase control of the Santa Fe Trail Transportation Company from the General Improvement Company, a wholly-owned subsidiary of the railroad, if the recommendations of J. Edward Davey, chief of the section of finance of the bureau of motor carriers is approved by the Interstate Commerce Commission. The railroad had asked authority to acquire direct control of the Santa Fe Trail Transportation Company by purchase of approximately 55 per cent of its capital stock from the General Improvement Company.

Transportation Day and Night

A transportation day and night, designed to accent freight transportation, will be staged by the Junior Traffic Club, of Chicago, on November 10. Arrangements provide for exhibits which will be open to the public for one day, motion pictures

which will be shown at regular intervals, and a dinner in the evening at which four speakers will represent various forms of transportation. Z. G. Hopkins, special representative of the Western Railways' Committee on Public Relations, will speak for rail transportation. J. J. Boylan, assistant general sales manager of the Railway Express Agency, will talk on Progress of Express. Dan Beard, chief test pilot of the American Air Lines, will speak on air transportation, and Barney Cushman, president of the Central Motor Freight Bureau, will speak for motor transport. The speaker for waterways will be announced later.

Utility Commissioners to Meet at New Orleans

The fiftieth annual convention of the National Association of Railroad and Utilities Commissioners will be held at New Orleans, La., on November 15 to 18. The program provides for the discussion of problems affecting public utilities, and a review of the progress made by state public service commissions in the regulation of public utilities. Topics to be discussed include Regulation of the Natural Gas Industry, the Rail Transportation Problem and Railroad Rates, Motor Carrier Problems and Transportation, Public Utility Finance and Reorganizations, and Progress of State Commissions in the Regulation of the Rates and Service of Public Utility Companies. Committees will report upon Railroad Rates, Motor Vehicle Transportation, Public Utility Rates, Service of Public Utility Companies, Statistics and Accounts of Public Utility Companies, Generation and Distribution of Electric Power, Progress in Public Utility Regulation, Rural Electrification, Depreciation, and Uniform Motor Freight Classification.

"Al" Smith Pushes N. Y. Crossing Amendment

Former Governor Alfred E. Smith urged New York state citizens to vote "yes" on the proposed railroad grade crossing elimination amendment to the state constitution in a radio address broadcasted by N. B. C. at supper time on October 31. Pointing out that the amendment, which would reduce the carriers' share in state-ordered elimination projects from 50 per cent to a maximum of 15 per cent of total cost, has been approved by the two major political parties, Mr. Smith approved the measure on the grounds that it would speed up improvements long needed for the safety of both railroad and highway transportation. While he realized that some railroads had used "obstructionist tactics" to delay the costly reconstruction jobs, nevertheless he believed that the 50 per cent of the cost now levied upon them is "entirely inequitable," and praised the principle of assessing the carriers only to the amount of the net benefit realized by them, to a 15 per cent maximum, as the fairest apportionment of costs in the opinion of "experts."

The New York State Automobile Association has issued to the general public a pamphlet urging the passage of the amendment (No. 3) as the "fastest, fairest way to eliminate grade crossings," declaring that present day requirements in motor transportation make it necessary to remove the danger of crossings, "the responsibility for which . . . should be assumed by the state as a part of its highway program."

Club Meetings

The Pacific Railway Club will hold its next meeting on November 10 in the Key System auditorium, 2129 Grove street, Oakland, Cal., at 7:30 p. m. William J. Besler, of Besler Systems, will speak on "Flash Boiler Locomotives and Cars and their Possibilities," in which he will describe the operation of the New Haven's Besler steam rail train. The talk will be illustrated by pictures.

The Eastern Car Foremen's Association will hold a dinner and evening of entertainment at the "Brown Derby," Boston, Mass., on November 14.

The Central Railway Club of Buffalo will hold its next meeting on November 10, at 8 p. m., in the Hotel Statler, Buffalo, N. Y. James G. Lyne, assistant to the editor, *Railway Age*, will discuss "The Present Political Situation as Related to the Railroads," wherein he will forecast how the results of the election will likely affect transportation legislation. H. L. Nancarrow, superintendent of the Buffalo division of the Pennsylvania, will present a talk entitled "Railroads—Their Benefit to the City of Buffalo."

Elections Scheduled at Pacific Greyhound

The National Labor Relations Board has directed that elections be held under the board's San Francisco regional director, among employees of Pacific Greyhound Lines. Approximately 680 bus drivers employed by the company will choose which, if either, of the two following organizations they wish to represent them: Amalgamated Association of Street, Electric Railway & Motor Coach Employees of America; Brotherhood of Railway Trainmen.

The remaining approximately 400 station, clerical and shop employees (excepting shopmen at Los Angeles and San Francisco) will determine whether they desire to be represented by the Amalgamated. An earlier poll of the bus drivers, during January of this year and involving the Amalgamated and the Brotherhood of Locomotive Firemen & Enginemen, which did not result in the selection of an exclusive representative, the board found to be no bar to a determination of representatives at this time.

Would Bar Bus-Line Purchase by Rail Affiliate

Because of the Southwestern Greyhound Lines' tie-up with the Southern Pacific and the St. Louis Southwestern, Examiner Robert R. Hendon, of the Bureau of Motor Carriers' Section of Finance, has recommended in a proposed report that the Interstate Commerce Commission disapprove the purchase by Southwestern of the Sedalia-Marshall-Boonville Stage Lines' bus-operating rights on the route between Fayette Junction, Mo., and Moberly. The examiner found that "evidence sufficient to sustain the statutory finding required" had not been adduced.

"The route involved," he said, "does not at any point touch the rail lines of the railroads. No evidence was introduced tending to show in what manner the railroads propose to use service over the line sought to be acquired to public advantage in their operations, and it is evident from the location of the route sought to be purchased that it could not be so used."

C. & N. W. Gets Motor Carrier Certificate

The Interstate Commerce Commission, Division 5, has granted the Chicago & North Western a common-carrier certificate for the transportation of general commodities and of passengers, baggage, express, mail and newspapers in interstate or foreign commerce over a specified highway route between Oral, S. D., and Hot Springs. In acting favorably upon the application the commission did so with the understanding that the railroad would conduct the proposed service directly with its own vehicles and employees, or make such new arrangements with its present contract operator as would permit the actual transportation operations to be carried on under a lease of equipment.

The commission suggested the above because of the fact that it has not yet determined whether under the Motor Carrier Act a motor common carrier lawfully may hire an independent contractor to perform the transportation it holds itself out to perform. While the question was not raised in the present case, the report goes on to note that "it is an important one to the administration of the Motor Carrier Act as a whole, and one which must be decided upon an adequate record and with due consideration."

National Association of Advisory Boards Meeting

The second annual meeting of the National Association of Advisory Boards was held at Chicago on November 1. The present officers of the association were re-elected for the ensuing year.

The program of the meeting provided for discussions of the aims and purposes of the association and discussions of transportation subjects of interest to shippers and carriers. Among the speakers were M. J. Gormley, executive assistant and R. V. Fletcher, vice-president and general counsel of the Association of American Railroads and S. T. Bledsoe, president and chairman of the executive committee of the Atchison, Topeka & Santa Fe. Judge Fletcher discussed the railroads' legislative program, and this was followed by an open forum in which several shippers expressed their views. Mr. Bledsoe described the work of the transportation committee of the United States Chamber of Commerce.

Jones Reveals Commitment to C. G. W. and W. P.

Jesse Jones, chairman of the Reconstruction Finance Corporation, announced at his

press conference on November 3 that his agency had agreed to loan the Chicago Great Western $6,500,000 which the company felt would enable it to carry out its reorganization program, if the loan was secured by a first mortgage on the property. He also said that the RFC was prepared to loan the receivers of the Western Pacific $10,000,000 to refund a like amount of receivers' certificates due on December 1, if the Interstate Commerce Commission approved a pending application by the receivers.

Asked about equipment loans, Mr. Jones said that there were very few applications for such loans but that with the improvement in business along all lines, more would undoubtedly be received. He also pointed out that the government would probably have to continue to be the roads' principal banker until the railroad situation was stabilized.

Argentine Legislature O. K.'s Purchase of Cordoba Central

The hitherto isolated 5,846-mile Argentine State Railways gain 1,218 route miles and a through trunk line to Buenos Aires, the capital city, by the purchase of the British-owned Cordoba Central, made official by the recent passage of an authorization bill by the Chamber of Deputies. The purchase price agreed upon is £8,500,000 ($42,160,000) of which a small part will be paid in cash and the remainder in government bonds.

By a parliamentary decree issued in the fall of 1937, the Argentine State Railways took over operation of the Cordoba Central for a period of four years, effective January 1, 1938, as was summarized in the *Railway Age* of February 26. According to the terms of that decree the state railways were to pay an annual rental of £380,000 ($1,884,800) and were placed in possession of a purchase option. By the latest decree the Central Cordoba becomes a permanent part of the state system.

As a connecting link between the present lines of the Argentine State system in the northern part of the country and the Cordoba Central, the Argentine State railways earlier this year assumed operation of several sections of the one meter gage railway system of the province of Santa Fe. Since the Cordoba Central is also one-meter gage, through service may be effected on the connecting lines. The lines of the Argentine State Railways proper are built in a variety of gages, ranging from 1.67 to 0.75 meters, but the principal system, the former Central Northern, is meter gage.

Canadian Roads' Earnings Up

Net operating revenues of the Canadian National for September showed a gain of $318,954 over the corresponding month of 1937. Gross revenues for the month totaled $17,849,629 as compared with $17,930,439, a decline of $80,810, but a drop of $399,764 in expenses for the period resulted in net operating revenues of $2,661,439 as compared with $2,342,485, a gain of $318,954. In August a gain of $101,718 was shown.

Gross revenues for the nine months aggregated $130,337,434 as compared with $146,075,299, a drop of $15,737,865, a decline in expenses for the period of $2,754,749 resulting in a deficit of $2,455,254 as compared with net operating revenues of $10,527,862 a year ago, a drop of $12,983,116.

The Canadian Pacific had net operating revenues for September up $509,693 as compared with a year ago, the first increase in net to be reported by the company in the current year. Gross revenues showed an expansion over levels of a year ago both in August and September. September gross amounting to $15,785,277 as against $14,355,271 a year ago, an increase of $1,430,005. There was an increase in operating expenses of $920,312 and net for the month stood at $3,651,406 as compared with $3,141,712 in 1937.

Gross for the nine months ended September 30 totaled $100,346,135 as against $105,101,990 a decrease of $4,755,855, while operating expenses showed a rise of $987,292, resulting in net earnings of $7,330,793 as compared with $13,073,941, a decrease of $5,743,147.

Proposed Reports on Motor Carrier Applications

Examiner John S. Higgins of the Bureau of Motor Carriers' Section of Finance has recommended in a proposed report that the Interstate Commerce Commission approve, subject to a condition, the purchase by the Frisco Transportation Company, affiliate of the St. Louis-San Francisco of the Southwest Truck Line, operating between Carthage, Mo., and Joplin, 18 miles. The examiner would condition the approval upon the acceptance of such restrictions as the commission may find necessary "to insure that the service shall be auxiliary or supplementary to the train service" of the Frisco and "shall not unduly restrain competition."

With a similar stipulation, Joint Board No. 114, composed of Frank J. McArdle of Maine, and Winslow E. Melvin of New Hampshire, has recommended that the I. C. C. approve the Maine Central Transportation Company's proposed purchase of the Portland-Conway Stages, operating a bus service between Portland, Me., and Jackson, N. H., 69 miles.

Also, with a similar condition, Joint Board No. 82, composed of Thomas R. Carey of Montana would authorize the Northern Pacific Transport Company to buy the Fitzhugh & Thompson bus line operating on a 95-mile route between Butte, Mont., and Ennis.

Examiner John S. Higgins of the Bureau of Motor Carriers' Section of Finance has recommended in a proposed report that the Interstate Commerce Commission approve, subject to a condition, the purchase by the Frisco Transportation Company, affiliate of the St. Louis-San Francisco, of the Southwest Freight Line's truck-operating rights on the 45-mile route between Miami, Okla., and Joplin, Mo.

United Engineering Trustees Elected

The United Engineering Trustees, founded in 1904 to advance engineering science, of which the Engineering Foundation is the research organization, have elected the following officers for the coming year: President, D. R. Yarnall, chief engineer of the Yarnall-Waring Company, Philadelphia, Pa.; First Vice-President, H. A. Lardner, J. G. White Engineering Corporation, New York; Second Vice-President, A. Roberts, secretary of the Minerals Separation North America Corporation, New York; Treasurer, H. R. Woodrow, vice-president of the Consolidated Edison Company of New York; Assistant Treasurer, J. P. H. Perry, vice-president of the Turner Construction Company, New York; Secretary, J. H. R. Arms, general manager of the Trustees.

The following trustees were elected on nomination of the four founder societies of United Engineering Trustees:

From the American Society of Civil Engineers—Mr. Perry; Colonel J. P. Hogan, chief engineer of the New York World's Fair; O. E. Hovey, director of the Engineering Foundation.

American Institute of Mining and Metallurgical Engineers—Mr. Roberts; W. D. B. Motter, Jr., of the Chile Exploration Company, New York; A. L. J. Queneau of the United States Steel Corporation, New York.

American Society of Mechanical Engineers—Mr. Lardner; Mr. Yarnall; Kenneth H. Condit, executive assistant to the president of the National Industrial Conference Board, New York.

American Institute of Electrical Engineers—H. P. Charlesworth, assistant chief engineer of the American Telephone & Telegraph Co.; Mr. Woodrow; F. M. Farmer, vice president and chief engineer of the Electrical Testing Laboratories, New York.

Proposed Motor Reports

Joint Board No. 36, composed of John E. McCullough of Kansas and John C. Highberger of Missouri, in two proposed reports to the Interstate Commerce Commission, has recommended that the Chicago, Burlington & Quincy's application for authority to extend its motor carrier operations between Beverly, Mo., and Leavenworth, Kans., be dismissed upon the motion of the applicant. In two applications, the company had asked for authority to extend its trucking operations and also for permission to carry passengers.

Joint Board No. 32, composed of C. V. Terrell of Texas and Clayton W. Coleman of Louisiana, in a proposed report to the commission, has recommended that it authorize the Southern Pacific Transport Company, highway subsidiary of the Southern Pacific, to purchase the operating rights and property of C. B. Sanders, doing business as Sanders Motor Freight Line; the operating rights of Joe Sandgarten, doing business as Sandgarten Motor Freight Lines; and certain operating rights of W. E. Davis, doing business as the Seacoast Motor Line, subject to condition.

Joint Board No. 32, composed of Mark Marshall of Texas and Clayton W. Coleman of Louisiana, would also authorize this company to purchase the operating rights and property of Lucian Pilarczyk, doing business as the L. P. Truck Line, and J. T. McCauley, doing business as

McCauley Transfer Company, subject to condition.

The Great Northern would be permitted to extend its common carrier service by motor truck of general commodities between Hobson, Mont., and Lewistown, over U. S. Highway 87 with no pick-up or delivery service at intermediate points, if the recommendation of Joint Board No. 82, composed of Thomas E. Carey of Montana is adopted by the commission.

Joint Board No. 164, composed of Alex Grouchy of Louisiana, in a proposed report to the commission, has recommended that it authorize the Missouri Pacific Transportation Company, highway subsidiary of the Missouri Pacific, to extend its operations as a common carrier by motor vehicle of passengers and their baggage, and of express, mail, and newspapers in the same vehicle with passengers, between Triumph, La., and Venice, over a specified route.

Hearings on Safety Regulations for Private Trucks

The Interstate Commerce Commission has scheduled for next January and February nine public hearings in connection with its investigation instituted some time ago to establish for interstate private truckers reasonable requirements with respect to qualifications and maximum hours of service of employees and safety of operation and equipment—"if need therefor be found."

The hearings, to be held before Examiner R. W. Snow, will open at Washington, D. C., on January 9, 1939, with other dates as follows: January 12, 1939, Hotel New Yorker, New York; January 16, 1939, Hotel Sherman, Chicago; January 19, 1939, Hotel Nicollet, Minneapolis, Minn.; January 23, 1939, United States Court House, Spokane, Wash.; January 25, 1939, Hotel Multnomah, Portland, Ore.; January 30, 1939, Offices of California Railroad Commission, Los Angeles, Calif.; February 3, 1939, Hotel Fontenelle, Omaha, Nebr.; February 6, 1939, Hotel Peabody, Memphis, Tenn.

"For the purpose of aiding in the presentation of evidence," a notice accompanying the order directs the attention of respondents "to the order of the commission dated December 23, 1936, prescribing safety regulations for common and contract carriers by motor vehicle, and the order of the commission dated July 12, 1938, prescribing maximum hours of service for employees of common and contract carriers by motor vehicle." The notice goes on to suggest that "in submitting testimony on the need for federal regulation of private carriers of property, it will be helpful to have evidence submitted as to what changes, if any, should be made in the safety regulations prescribed for common and contract carriers in order to make them applicable to private carriers of property."

The commission, as noted in the *Railway Age* of October 1, has recently reopened the common and contract carrier hours-of-service case, and the further hearing opened before Examiner Snow at the Hotel Sherman, Chicago, on November 4.

New Book Offers Employees I. C. Story

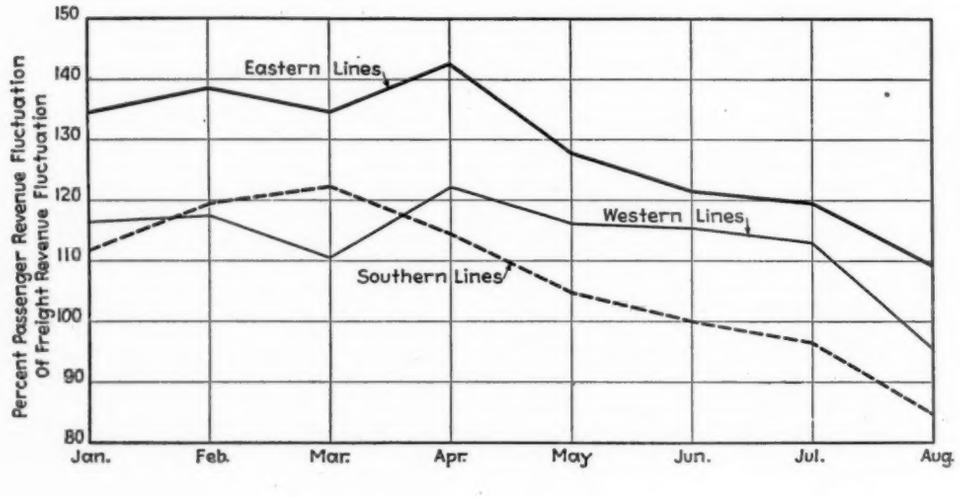
In order that every Illinois Central employee may have an opportunity to learn more about the system, its history, organization, operation and traffic, the company is publishing a book of more than 500 pages entitled "Organization and Traffic of the Illinois Central System." The book is being sold to employees for $1 and to the general public for $3. The publishing of the book is a result of the popularity of lectures delivered in the educational program of the traffic department during the last two years. The chapters have been contributed by more than fifty authors who lectured during the educational program. The lectures have been revised and brought up to date by the original authors. General editorial work and production details have been handled by the research and development bureau.

To give continuity to the chapters, which treat of many and varied subjects, the book has been divided into six major parts. Part I, History and Property of the Illinois Central System, covers the history, the geography, the property and operations in Chicago, and the Chicago produce terminal. Part II, Organization and Operation, covers importance and organization, functions of the operating department, functions of the transportation department, perishable protective services, trackage and car-haul arrangements, trap cars and peddler cars, relation of traffic and operating departments, functions of the accounting department, functions of the purchasing and supply department, and regulation under the Interstate Commerce Act. Part III, Traffic Department Functions and Procedure, covers the general freight agent's office, classification and association territories, railroad freight associations, consolidated freight classification, tariff publications, tariff posting rules of the Interstate Commerce Commission, procedure before the Interstate Commerce Commission, divisions of freight rates, the Chicago switching district, leases and sidetracks, relation of the service bureau to the traffic department, files and filing systems, agricultural development, industrial development, statistics and their use, and the research and development bureau. Part IV, Passenger Traffic, covers passenger rates and associations, passenger train make-up at Chicago, headend traffic, and suburban passenger operations and traffic. Part V, Freight Traffic, covers coal traffic, lumber traffic, petroleum adjustment, rates and transit on grain, cotton and cotton transits, livestock and packinghouse products traffic, fruit and vegetable traffic, fruits and vegetables from Texas and Idaho, coffee and banana traffic, automobile and parts traffic, merchandise traffic, export and import traffic and functions of the industrial traffic manager. Part VI, Traffic Outlines by Areas, covers the Chicago area, the St. Louis area, the Louisville area, the Memphis area, the New Orleans area, the New York area, the Atlanta area, the Dallas area, the Omaha area, and the San Francisco area.

Equipment Depreciation Orders

Equipment depreciation rates for 13 railroads are prescribed by the Interstate Commerce Commission in a new series of sub-orders and modifications of previous sub-orders in No. 15,100 Depreciation Charges of Steam Railroad Companies. The composite percentages, which are not prescribed rates, range from 3.03 for the Texas & New Orleans to 11.61 for the Osage. Also included among the 13 roads are the New York, Chicago & St. Louis;

* * * *



Passenger Business, Which Held Up Far Better Than Freight Business in the Early Months of the Year, Seems to Be Losing Its Edge

1938 Passenger Revenue Percentages of 1937 ÷ 1938 Freight Revenue Percentages of 1937.

Alton; Chicago, Indianapolis & Louisville; and Grand Trunk Western.

The above-mentioned 3.03 composite percentage for the Texas & New Orleans is derived from prescribed rates as follows: Steam locomotives (both owned and leased), 2.76 per cent; other locomotives, 9.46 per cent; freight-train cars (owned), 3 per cent—leased, 3.36 per cent; passenger-train cars (owned), 2.47 per cent—leased, 2.72 per cent; light-weight streamlined passenger-train cars (leased), 3.84 per cent; work equipment (owned), 3.72 per cent—(leased), 3.32 per cent; miscellaneous equipment, 10.35 per cent.

The Nickel Plate's composite percentage of 3.93 is derived from the following prescribed rates: Steam locomotives, 3.8 per cent; freight-train cars, 4.04 per cent; passenger-train cars, 3.1 per cent; work equipment, 4.43 per cent; miscellaneous equipment, 6.95 per cent. The Alton's composite percentage of 4.34 is derived from the following prescribed rates for owned and leased equipment, respectively: Steam locomotives, 5.09 per cent and 2.78 per cent; other locomotives (leased), 6.63 per cent; freight-train cars, 4.79 per cent and 2.5 per cent; passenger-train cars, 3.79 per cent and 2.74 per cent; work equipment, 3.23 per cent and 6.93 per cent; miscellaneous equipment (owned), 13.33 per cent.

The Monon's composite percentage is 3.67; its prescribed rates are as follows: Steam locomotives, 2.78 per cent; freight-train cars, 4.23 per cent; passenger-train cars, 2.87 per cent; work equipment, 3.92 per cent; miscellaneous equipment, 14.98 per cent. The Grand Trunk Western's composite percentage of 3.23 is derived from the following prescribed rates for owned and leased equipment, respectively: Steam locomotives, 3.28 per cent and 2.78 per cent; other locomotives (owned), 6.5 per cent; freight-train cars, 3.37 per cent and 3.11 per cent; passenger-train cars, 3.87 per cent and 3.16 per cent; work equipment (owned), 3.5 per cent; miscellaneous equipment (owned), 9.67 per cent.

The statement also lists Sub-order No. 189-A, which vacates Sub-order No. 189, dated June 17, 1935, relating to the Charlotte, Monroe & Columbia.

I. C. C. Disapproves Rail Plan for Acquiring Truck Route

Because it did not approve of the set-up proposed, the Interstate Commerce Commission, Division 5, has denied the application of the Chicago, Rock Island & Pacific for authority to lease the A. & A. Truck Lines' operating rights on the 158-mile route between Hutchinson, Kans., and Dodge City. The commission will, however, give further consideration to lease or purchase of the rights under revised terms and conditions.

Among other things which complicated the transaction, the commission cited the employment of William F. Peterson, owner of A. & A. Truck Lines, by the Rock Island "for the purpose of promoting the latter's trucking operations." The decision expresses no opinion as to whether such employment "is inconsistent with the independent nature" of Mr. Peterson's motor carrier operations, "resulting in an effectuation of control of the latter by the railroad . . . but the parties are expected promptly to effect divestiture of any unlawful control which may exist."

The lease provided that A. & A. would move freight on the Hutchinson-Dodge City route solely for the railroad with no direct contact between the motor carrier and the shipping public. The lessor would furnish the equipment while the railroad would pay on a sliding-scale truck-mileage basis with certain minimum guarantees. The lease was to expire October 31, 1941, and there was an agreement giving the Rock Island an option to purchase the rights on or before May 1, 1941. Also, the trucker was to assume liability for loss and damage to lading while in his custody. Another provision contemplated an extension of the arrangement between Hutchinson and Herington, Kans., in the event the railroad's pending application for a certificate is granted.

After reviewing the transaction the commission finds that, under the proposed terms, control of the motor route by the railroad would be achieved "without a corresponding acceptance of the responsibilities and liabilities for the actual operation." The decision goes on to say: "If this transaction were a lease of motor-carrier rights by the railroad, there would seem to be no necessity for the obligations incurred by lessor under the instruments. The proposed manner of operation, particularly in view of lessor's other operations, is further complicated by the fact that lessor, on January 20, 1937, entered applicant's employ . . . Under the proposed arrangement it is not entirely clear whether lessor or applicant would be the motor carrier. However it would appear, bearing in mind lessor's ownership of motor vehicles, and his obligations under the contract, that lessor, as to the operations covered by the purported lease, would remain a motor carrier, but that his status would change from that of a common carrier to that of a contract carrier. In short, the lease appears to be no more than a contract under which lessor would confine his services to the railroad. This is incompatible with his common carrier obligation to serve the general public."

A. S. M. E. to Hold Annual Meeting December 5-9

The American Society of Mechanical Engineers will hold its 59th annual meeting at the Engineering Societies building, New York City, December 5-9. Delegates from 71 local sections of the society located in the United States and Canada will meet to discuss ways and means of increasing the usefulness of this organization of 15,000 engineers to the individual member and his community.

The Railroad Division of the society, one of the 17 divisions, each of which covers a specialized field in mechanical engineering, will bring a group of four papers to the meeting as follows: Counterbalancing of Reciprocating Weights in Steam Locomotives, by A. I. Lipetz, chief consulting engineer, American Locomotive Company; Electric Locomotives, by B. S. Cain, assistant engineer in charge of design, locomotive division, General Electric Company; Motive Power Characteristics and Lightweight Equipment, by R. Eksergian, Edward G. Budd Manufacturing Company; Annual Report of Progress in Railway Mechanical Engineering, by E. G. Young, research professor, railway mechanical engineering, University of Illinois.

The first two of these papers will be presented at the morning session on Thursday, December 8, and the latter two will be presented at the afternoon sessions of the same day. At 6:30 p. m., there will be held the annual dinner of the Railroad Division.

Tuesday, December 6

Afternoon

POWER—FUELS

Report of Boiler Feedwater Studies Committee, by C. H. Fellows

ELASTICITY—APPLIED PROBLEMS AND MECHANICAL SPRINGS (I)

Stresses in Helical Compression Springs, Present Status of the Problem, by C. T. Edgerton
Analysis of Effect of Wire Curvature on Allowable Stresses in Helical Springs, by A. M. Wahl
A Method of Calculating Energy Losses During Impact, by C. Zaener and H. Feshbach.

Evening

Honors Night

Wednesday, December 7

Morning

OIL AND GAS POWER

Five Years' Progress of Oil and Gas-Power, by H. E. Degler
The Vectorscope—A new instrument useful in the solution of problems pertinent to study and design of internal-combustion engines, by G. J. Dashefsky

METAL-FORMING PROCESSES

The Effect of the Speed of Stretching and the Rate of Loading upon the Yielding of Mild Steel, by E. A. Davis
Tension Devices in Rolling Strip, by Morris Stone
The Forces Required for Rolling Strip Under Tension, by A. Nadai

Afternoon

ELASTICITY—APPLIED PROBLEMS AND MECHANICAL SPRINGS (II)

Deflection of Helical Springs under Transverse Loadings, by W. E. Burdick, F. S. Chaplin and W. L. Sheppard
Strength of Metals, with Special Reference to Spring Materials, by D. J. McAdam, Jr., and R. W. Clyne
Research Report on Helical Springs, by C. T. Edgerton

LUBRICATION

Thin Oil Films, by Walter Claypoole
Wear in Lubrication Problems, by L. M. Tichvinsky

Evening

Annual banquet and President's reception, Hotel Astor

Thursday, December 8

Morning

RAILROAD

Counterbalancing of Reciprocating Weights in Steam Locomotives, by A. I. Lipetz
Electric Locomotives, by B. S. Cain

Afternoon

EDUCATION AND TRAINING

The Cost of Apprenticeship, by Warner Seely
Industrial Training in the Air-Conditioning Industry, by Ray D. Smith

RAILROAD

Motive-Power Characteristics and Lightweight Equipment, by R. Eksergian
Annual Report of Progress in Railway Mechanical Engineering, by E. G. Young

Evening

Railroad dinner

Freight Car Loading

Loading of revenue freight for the week ended October 22, totaled 705,628 cars, a decrease of 20,984 cars or 2.9 per cent be-

low the preceding week, a decrease of 64,528 cars or 8.4 per cent below the corresponding week in 1937 and a decrease of 225,477 cars or 24.2 per cent below the same week in 1930. All commodity classifications except grain and grain products showed decreases under last week and under last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loadings

For Week Ended Saturday, October 22

Districts	1938	1937	1936
Eastern	141,698	156,831	162,712
Allegheny	123,761	144,420	162,085
Pocahontas	51,239	55,496	58,411
Southern	103,854	107,630	112,617
Northwestern ...	101,022	110,781	123,520
Central Western.	129,567	133,969	130,687
Southwestern ...	54,487	61,029	66,210
Total Western Districts	285,076	305,779	320,417
Total All Roads.	705,628	770,156	816,242
Commodities			
Grain and Grain Products	46,496	36,440	33,022
Live Stock	21,308	22,383	22,264
Coal	127,992	157,045	154,615
Coke	5,722	8,688	10,334
Forest Products.	32,422	32,734	36,301
Ore	28,064	38,044	49,766
Merchandise l.c.l.	159,437	169,054	171,093
Miscellaneous ...	284,187	305,768	338,847
October 22	705,628	770,156	816,242
October 15	726,612	806,095	826,525
October 8	702,964	812,258	820,570
October 1	697,938	843,861	819,597
September 24 ..	675,553	836,885	807,243
Cumulative Total, 42 Weeks	24,281,003	31,534,459	28,922,641

In Canada.—Carloadings for the week ended October 22 reached a peak for the year at 62,030 and for the second time this year exceeded the 1937 loadings, by 681 cars, according to the compilation of the Dominion Bureau of Statistics. The week's loadings topped those of the previous week by 4,739.

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
Oct. 22, 1938	62,030	22,930
Oct. 15, 1938	56,769	22,057
Oct. 8, 1938	60,637	23,854
Oct. 23, 1937	61,349	27,233
Cumulative Totals for Canada:		
Oct. 22, 1938	1,964,020	859,467
Oct. 23, 1937	2,128,905	1,142,601
Oct. 17, 1936	1,964,701	966,551

Commission Reconsiders Spokane International Case

The Interstate Commerce Commission, on November 1, heard oral argument in support of a number of modifications in the commission's final plan of reorganization for the Spokane International, which the first mortgage bondholders of the road insist should be included in the final plan. The commission had recently reopened the case at the request of the bondholders although the final plan had been issued several months ago.

R. T. Swaine, attorney for the first mortgage bondholders, indicated that unless the commission makes the changes in the plan recommended by his committee, they will probably be forced to carry the case to the Supreme Court for a final decision. Mr. Swaine also urged the commission to call a conference with his committee before it undertakes to act on any of the modifications which he requested.

The modifications which Mr. Swaine requested, provide: (1.) The plan should provide for a new first mortgage, under which no bonds would be issued in the reorganization, so as to make impossible financing by income mortgage bonds or stock.

(2.) The plan should make the proposed capital fund discretionary instead of mandatory and should provide that depreciation charged against income, except in respect of equipment, shall be credited against the amount which may be deducted from income for the capital fund.

(3.) The plan should provide for an equipment fund, in addition to the capital fund, which may be used to make initial payments for equipment purchased under equipment trust agreements.

(4.) The plan should provide that interest on the income mortgage bonds will be fully cumulative up to a maximum of 13½ per cent, whether or not earned.

(5.) The plan should protect the holders of income mortgage bonds and facilitate acquisition of control of the reorganized company, on proper terms, by some larger system, by an arrangement for escrowing the new common stock of the reorganized company for a specified period.

(6.) The plan should provide for the execution of the plan by sales of the properties of the Spokane International and the Coeur d'Alene, if so directed by the court.

In his oral argument, Mr. Swaine was critical of the commission's work, pointing out that the final plan for the Spokane bore no resemblance to anything that any of the parties had submitted to it for consideration. He complained that nearly every time security holders had come before the commission with a plan of reorganization the commission had "chucked out" the plan.

Electro-Motive Plant Enlarged

A 300,000 sq. ft. addition to its Diesel locomotive plant at La Grange, Ill., has been completed by the Electro-Motive Corporation, subsidiary of General Motors. The addition increases the manufacturing area two-thirds, bringing it to a total of about 14 acres, and makes the plant one of the most completely self-contained units for building locomotives in the country. It brings under one roof complete facilities for the fabrication of Diesel-electric switching and passenger locomotives, with the exception of certain castings and forgings which may be purchased more economically from outside sources due to the variety of their sizes and shapes.

The enlargement is the second since the plant was opened in January, 1936. Employment has increased to 2,000 from an original working force of 350. A total of 225 locomotives, developing an aggregate of 210,000 h. p. has been turned out of the plant to date, the total value of these locomotives together with spare parts manufactured for stock, being $25,000,000. As enlarged and equipped, the plant now has a maximum capacity of one complete locomotive per working day.

Sargent Urges Complete Revision of Transportation Legislation

The inadequacy of legislation under which the railways now operate, drafted in the days when the railways were believed to have a monopoly on transportation, was emphasized by Fred W. Sargent, president of the Chicago & North Western, in an address before the Chicago Association of Commerce at Chicago on November 2.

"We have had a railroad problem," Mr. Sargent said, "ever since the government returned the properties to their owners in 1920. Since that time there has never been a year in which the industry as a whole has been on a sound earning basis, by which I mean earning interest and dividends on an honest and conservative capital structure, plus surpluses for reasonable retirement of debt and for indispensable and progressive capital expenditures to cover a fair part of additions and betterments.

"Many solutions have been offered for relief from the dilemma, such as consolidations, pooling, co-ordination of services and facilities, more flexible rate-making powers by the railroads themselves, and the elimination of numerous restrictions and requirements that would restore to the

The 360-ft. by 820-ft. Addition Adjoins the Original Building on the Left or West Side and Includes Five Bays

railroads more of the functions of management. These would all help, but in the deplorable state of the industry today all of them combined will not permanently solve the problem.

"A full solution lies in a broader field. The entire plan of regulation will have to be revised. It is founded on the premise that railroads have a monopoly of transportation. Such a conception permeates the great bulk of all the laws, rules and regulations now controlling the activities of carriers by rail. In my judgment, either the subsidies will have to be removed and these unjust requirements, such as are manifested in the Denison Act, repealed, and each kind of transportation made to stand squarely upon its own merits, or all will have to be subsidized alike.

"This whole attitude and philosophy with relation to the regulation of railroads must experience a complete right-about-face. The railroads must be given a full and free hand to compete for any and all kinds of traffic and to enter into the field of all kinds of transportation. They must be given a freer hand to make and apply their tariffs, without the restrictions and limitations wherein the making of a rate in one places fixes a precedent for all rates in all other places. They must be permitted to make rates without establishing precedents that will jeopardize their earnings for all time in the future. They must be released from many of the other restrictive regulations and requirements that now surround and hem them in in their initiative and their activities.

"I realize that what I have said looks more to a long range, permanent remedy for the railroad situation than it does toward any immediate relief. The situation, however, is so precarious at the moment that I can reach no other conclusion than that some other temporary emergency relief will have to be afforded if the railroads are to go forward with proper maintenance of their properties and tide over this present period."

Weyerhaeuser Presents "Lumber Night" at N. Y. Railroad Club

Four short talks and a full-length sound motion picture described the ins-and-outs of the lumber industry in general and the interdependence of that industry with the railroad in particular in a program presented by the Weyerhaeuser Sales Company of St. Paul, Minn., before 600 members and guests of the New York Railroad Club on October 28. Opening the program, F. K. Weyerhaeuser, president, Weyerhaeuser Sales Company, outlined the extent to which lumber is used in American industry and building and reviewed its production curve. He pointed out that the industry stands fourth in the number of employees and fifth in wages paid in the country and that more than 6,000,000 people depend upon it for a livelihood. He especially emphasized the fact that lumber is the only readily reproducible national resource and stated that with a modern and entirely practical schedule of reforestation and protection American forests will produce two or three times the number of trees for which markets are now available.

M. W. Williamson, manager, railroad and car lumber sales, spoke on the modernization of the lumber industry, reviewing the progressive mechanization of the processes of harvesting trees and handling them at mills. "What the Railroads Mean to the Lumber Industry" was the subject presented by I. N. Tate, vice-president and secretary of the company. In illustration of the interdependence between these two industries, the speaker cited the following railroad activities which have or had an effect on lumbering: (1) Land grant tracts given to the railroads became a tremendous source of supply for timber and the desire of the roads to secure working capital from their holdings of timber acted as a great stimulant for the sale of their lumber interests and hence to the development of the industry and the opening up of the West. (2) The willingness of the railroads to build branch lines into inaccessible timber areas widened the area of lumber operations. (3) The transportation of products from saw mills to large markets performed by the railroads is absolutely essential, for lumber is a bulk commodity and is produced a great distance from its chief markets. For example, the rail haul of fir timber to eastern territory averages 2,600 miles. (4) Experience has further proven that they [the railroads] deliver the products of the lumber industry in better condition than is possible in any other medium of transportation." The Weyerhaeuser mills were able to increase the percentage of their all rail shipments from 61 per cent in 1934 to 69½ per cent in 1937. (5) The railroads have been large users of forest products, averaging about 20 per cent of the total products in pre-depression years to less than 10 per cent at present.

In discussing the volume of lumber shipped by rail, Mr. Tate declared that the lumber industry wants to ship its products by rail but is finding it increasingly difficult to do so. In illustration of this he pointed out that ten years ago certain eastern distributing yards shipped 77 per cent of their lumber by rail. This volume shrank to 17¼ per cent in 1936, to 9½ per cent in 1937 and to 5½ per cent in the first eight months of 1938. Furthermore, he said the industry in the South and West is finding it increasingly difficult to hold to rail shipment to nearby points. In conclusion the speaker said that great opportunities exist for railroad traffic in lowering transportation costs so as to make available to markets certain species and types of trees that are at present left in the woods because of unprofitability.

The final speaker, H. T. Kendall, vice-president and general manager, in discussing what the lumber industry means to the railroads, pointed out that over 7 per cent of total carloadings are lumber; that the average freight on lumber is $269 per thousand dollars of value, compared with $62 to $82 on iron and steel and $79 on stone.

Bulletin Describes "Railroads on Parade"

A railroad show in the grand manner, portraying 16 scenes on a triple stage and utilizing a switching locomotive as the chief stagehand, is described in Bulletin No. 2 of a series issued by the World's Fair Committee of the Eastern Presidents Conference, which is undertaking the railroad exhibit for the Eastern roads at the New York World's Fair of 1939. The show, entitled "Railroads on Parade," is a large-scale pageant which will be presented in the 5½-acre amphitheatre to be built as a part of the railroad building at the fair. Edward Hungerford has prepared the script and designed the stage; music has been composed by Kurt Weill; scenery and costumes will be by Harry Horner; A. Sheldon Pennoyer, well-known artist and railroad hobbyist, is acting as artistic adviser of the enterprise and Howard Ketcham, color engineer, is retained as consultant.

The pageant, as described in the bulletin, will tell the story of railroad development in the United States, in aid of which all modern stage devices will be used—color, scenery, lighting and sound amplification. An early description of the entire railroad building at the fair appeared in the *Railway Age* for January 8, page 131.

New Frisco Reorganization Plan Filed with I. C. C.

A new plan of reorganization for the St. Louis-San Francisco was filed with the Interstate Commerce Commission on October 27 by the Fort Scott Committee, the Prior Lien Committee and the Consolidated Committee. The new plan provides for a total funded debt of $135,762,873 as compared with the present capitalization of $492,258,851. Fixed charges, under the proposed plan, would be reduced from $12,613,106 to $3,336,496. The new plan makes no provision for unsecured creditors or stockholders in the proposed treatment of new securities.

The proposed capitalization of the new company would consist of the following securities: Equipment trust certificates, $5,874,000; first mortgage bonds, series A 4s, due 1950, $6,506,170; first mortgage bonds, series B 4s, due 1980, $71,714,623; income mortgage bonds 4½s, due 2015, $51,668,080; preferred stock, $77,307,713, $100 par value shares; and authorized 3,100,000 shares of no par common stock.

The Consolidated Committee will contend for the issuance of approximately 1,489,181 shares of common stock, of which approximately 389,000 shares would be allocated to consolidated mortgage bonds at the rate of $150 a share in respect of the amount by which the aggregate principal and interest secured by the lien of the consolidated mortgage exceeds the principal amount or par value (taking the common stock at $100 a share) of securities allotted to the consolidated bonds in respect of the bonds pledged under the consolidated mortgage and the $3,500,000 intermediate lien of that mortgage on the properties subject to the Fort Scott mortgage. The plan states that the Fort Scott committee has no objection to such an allocation.

The Prior Lien Committee will contend that if any allocation is made in respect of such excess, such allocation should be on a basis materially less advantageous to the

consolidated bonds. By mutual agreement that question has been reserved for a later determination by agreement of the committees or by a decision of the Interstate Commerce Commission or the court.

Hearings on the three committees' plan of reorganization was begun on November 1 before the commission. Considerable opposition to the treatment accorded the Reconstruction Finance Corporation in the new Frisco reorganization plan became evident on November 2 when that agency began the presentation of its case. Chairman Jesse Jones was slated to present the RFC's case in person, but was unable to appear. Cassius Clay, chief railroad counsel for the RFC, read a letter into the record which expressed Mr. Jones opposition to the RFC's treatment under the new plan.

Mr. Jones' letter, addressed to Commissioner Meyer, follows:

"Referring to my letter to the Readjustment Managers named in the 1932 Plan for the financial readjustment of the St. Louis-San Francisco Railway Company, in reply to their letter dated December 22, 1933, addressed to the Interstate Commerce Commission, the Reconstruction Finance Corporation and the Railroad Credit Corporation, beg to advise that I wish to renew the statements in said letter.

"As a Director of the RFC, I would not have voted for the loan of $3,390,000 to the Railroad, which was disbursed on June 30, 1932, and I do not believe that the ICC or the Directors of the RFC would have approved said loan had they not relied upon the agreement of the five bankers, other security holders and of the Railroad that a financial readjustment of the Railroad would be effected under a plan containing definite provisions that there would be pledged with the RFC $3,390,000 of new bonds of the road under a mortgage having a lien subordinate to the Fort Scott mortgage but prior to the liens of the prior lien and consolidated mortgages. As a part of the agreement, the Railroad Credit Corporation surrendered to the RFC $2,014,000 of the road's consolidated bonds in reliance upon a similar commitment.

"I have not seen the plan which has been recently filed with the ICC by the Committees, and no representatives of the Committees conferred with me about said plan, but I understand that said plan does not recognize these commitments which I think unfair and inequitable.

"I am advised by representatives of this Corporation who have considered the matter, that the road and the security holders in question are under an enduring obligation to furnish this Corporation the agreed protection, and feel confident that the Commission, which is aware of the essential facts, will in the plan it certifies to the court give due recognition to the provisions agreed on for the protection of the RFC.

"Under the commitment, as understood by the parties at the time, the new bonds would be deliverable to the RFC either under the 1932 plan or some modification thereof; and the RFC accordingly insists on recognition of its rights."

Upon the completion of the reading of the letter, counsel for the Prior Lien, Consolidated, and Fort Scott committees objected to its becoming a part of the record and asked Finance Director Sweet to strike it from the record. This, Director Sweet refused to do. R. T. Swaine, representing the Consolidated committee, said that the letter did not state the facts of the case.

I. B. A. Asks Roads To Go Trucking

(*Continued from page 674*)

Hence the committee believes that the railroads should be permitted to own and operate trucks under fewer restrictions as to routes and character of service, and suggests that the Railway Express Agency, or its present interstate trucking subsidiary, Railway Express Motor Transport, Inc., obtain a certificate of public convenience and necessity to operate trucks in interstate commerce in all parts of the country, and that the Express Agency be created the truck subsidiary for all of the carriers by law. Regarding the preference of some railroad executives to develop individual trucking subsidiaries, the report declares that "it would appear that the duplication of facilities that would result from building up a number of organizations would be a luxury that the railroads could hardly afford under present-day conditions."

In discussing the wage question, the report concentrates its attention on "the inconsistencies and inequalities governing the manner of payment of a large proportion of those employed," and especially on "featherbed" rules. Citing the decision of the Railroad Adjustment Board of April, 1937, granting $241,000 to Lehigh Valley train crews for Pennsylvania station-Sunnyside yards, N. Y., dead-heading, and similar awards decided against the C. & N. W. and the Rock Island, the report says: "Numerous incidents of a similar nature could be recited; and the layman immediately wonders why the railroads submit to this form of sabotage."

9 Months N. O. I. $205,073,657

(*Continued from page 673*)

crease of $298,035 or one per cent below September, 1937. Forty-four Class I roads failed to earn expenses and taxes in the nine months, of which 17 were in the Eastern district, seven in the Southern district and 20 in the Western district.

Gross for September amounted to $322,594,889 compared with $363,070,853 in September, 1937, and $462,209,448 in September, 1930; operating totaled $232,040,185 compared with $262,711,697 in the same month in 1937, and $316,494,334 in September, 1930.

Class I roads in the Eastern district for the first nine months had a net of $108,346,165, which was at the annual rate of return of 1.2 per cent. For the same period in 1937, their net was $270,690,298 or 3.02 per cent, while in 1930 it was $341,178,879 or 3.86 per cent. Gross in the Eastern district for the nine months totaled $1,206,246,196, a decrease of 23.9 per cent compared with 1937, and a decrease of 40 per cent compared with 1930; operating expenses totaled $928,098,733, a decrease of 18.5 per cent below the same period in 1937, and a decrease of 37.9 per cent below the first nine months in 1930.

In the Eastern district the September net railway operating income was $22,333,274 compared with $29,762,396 in September, 1937 and $43,450,802 in September, 1930.

Class I roads in the Southern district for the first nine months had a net railway operating income of $36,807,398, or 1.64 per cent; for the same period in 1937, their net amounted to $57,749,243, or 2.55 per cent, and for the same period in 1930 it was $63,017,348 or 2.6 per cent. Gross in the Southern district for the first nine months amounted to $343,252,405, a decrease of 12.3 per cent compared with the same period in 1937, and a decrease of 30.2 per cent under the same period in 1930; operating expenses totaled $266,004,917, a decrease of 9.4 per cent below the same period in 1937, and a decrease of 31.6 per cent under 1930.

Class I roads in the Southern district for September had a net railway operating income of $6,968,035 compared with $6,418,209 in September, 1937, and $8,827,060 in September, 1930.

The Western district net for the first nine months was $59,920,094 or 0.81 per cent. For the same nine months in 1937, the railroads in that District had a net of $142,389,964 which was at the annual rate of return of 1.94 per cent, and for the same period in 1930 it was $243,919,060 or 3.21 per cent. Gross in the Western district for the nine months amounted to $1,024,533,208, a decrease of 14.5 per cent below the same period in 1937, and a decrease of 33.2 per cent under the same period in 1930. Operating expenses totaled $821,755,090, a decrease of 11.1 per cent compared with the same period in 1937, and a decrease of 27.6 per cent under the same period in 1930.

For September, the Class I roads in the Western district reported a net railway operating income of $21,060,514 compared with $23,440,579 in September, 1937, and $50,574,528 in September, 1930.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, Westinghouse Air Brake Co., 350 Fifth Ave., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION. — J. F. Gettrust, P. O. Box 5522, Chicago, Ill.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., 327 S. La Salle St., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS. — E. P. Soebbing, 1431-B Railway Exchange Bldg., St. Louis, Mo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, 1939, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 20-21, 1939, Philadelphia, Pa.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS. — F. R. Borger, C., I. & L. Ry., 836 S. Federal St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill.,

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. J. Hoddy (Second Vice-Pres.), Louisville & Nashville R. R., Louisville, Ky.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 14-16, 1939, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., 1105 B. & O. R. R. Bldg., Baltimore, Md.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York, N. Y. Annual meeting, December 5-9, 1938, 29 W. 39th St., New York, N. Y.
Railroad Division.—Marion B. Richardson, 21 Hazel Ave., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION. — H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, January 24-26, 1939, Willard Hotel, Washington, D. C.

ASSOCIATION OF AMERICAN RAILROADS. — H. J. Forster, Transportation Bldg., Washington, D. C.
Operations and Maintenance Department.—J. M. Symes, Vice-President, Transportation Bldg., Washington, D. C.
Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Safety Section. — J. C. Caviston, 30 Vesey St., New York, N. Y.
Telegraph and Telephone Section. — W. A. Fairbanks, 30 Vesey St., New York, N. Y.
Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 14-16, 1939, Palmer House, Chicago, Ill.
Construction and Maintenance Section. —W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 14-16, 1939, Palmer House, Chicago, Ill.
Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill.
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.
Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.
Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago, Ill.
Purchases and Stores Division.—W. I. Farrell, 30 Vesey St., New York, N. Y.
Freight Claims Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.
Motor Transport Division. — George M. Campbell, Transportation Bldg., Washington, D. C.
Car-Service Division. — E. W. Coughlin, Transportation Bldg., Washington, D. C.
Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.
Accounting Division. — E. R. Ford, Transportation Bldg., Washington, D. C.
Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C.
Traffic Department. — A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB. — C. R. Crook, 4468 Oxford Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, Mo.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel Mayfair, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept., C., B. & Q., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS. —J. T. Bougher, 424 W. 33rd St., (11th floor), New York, N. Y.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION. — F. T. James, General Foreman, Delaware, Lackawanna & Western, Kingsland, N. J.

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION. — A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, 806-808 13th and E Sts., N. W., Washington, D. C. Annual meeting, November 15-18, 1938, Roosevelt Hotel, New Orleans, La.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July. August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB. — D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, except June at Los Angeles and January, 1939, at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill. Annual dinner, November 16, 1938, Hotel Commodore, New York, N. Y.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Mc C. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill.

RAILWAY FIRE PROTECTION ASSOCIATION.—P. A. Bissell, 40 Broad St., Boston, Mass.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION. —J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division and Purchases and Stores Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS. — J. W. O'Neill, 310 Academy St., South Orange, N. J.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS. — D. W. Brantley, C. of Ga. Ry., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. & C. Company, 59 E. Van Buren St., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

WESTERN RAILWAY CLUB.—W. L. Fox, (Executive secretary), Room 822, 310 South Michigan Ave., Chicago Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Supply Trade

New Company to Market Fiber Glass Products

The Owens-Illinois Glass Company and the Corning Glass Works have formed the Owens-Corning Fiberglas Corporation which will produce a variety of products made from fiber glass. These products will be marketed in such fields as household equipment, building construction, refrigeration insulation, air filters, and electric-power insulation, fields previously dominated by organic textiles and other materials. The products and processes are protected by basic patents.

Amory Houghton

The new corporation is financed jointly by Owens-Illinois and Corning and is an independent corporate structure which will not operate as a subsidiary of either parent company. The officers are: Chairman of the board, Amory Houghton, who is also president of the Corning Glass Works; president, Harold Boeschenstein, who has resigned as vice-president and general manager of the Owens-Illinois Glass Company; vice-presidents, Games Slayter, who has played a major part in the development of the new basic product, and W. P. Zimmerman, formerly general manager of the industrial products division of Owens-Illinois; general sales manager, G. E. Greg-

Harold Boeschenstein

ory, former sales manager of Corning; secretary, A. C. Freligh, former comptroller of fiber glass products of Corning; comptroller, H. R. Winkle, formerly assistant comptroller of Owens-Illinois. The principal offices of the company are at Toledo, Ohio. The New York offices are at 718 Fifth avenue. Other sales offices will be located at Boston, Mass.; Washington, D. C.; Chicago; Detroit, Mich.; Pittsburgh, Pa.; Cincinnati, Ohio, and San Francisco, Calif.

Amory Houghton was born on July 27, 1899, at Corning, N. Y. He was educated at St. Paul's School, Concord, N. H., and Harvard University. After receiving his A.B. degree at Harvard in 1921 he entered the service of the Corning Glass Works. He was made assistant to the president in 1926 and became executive vice-president in 1928. He was elected president in 1930.

Harold Boeschenstein was born on July 21, 1896, at Edwardsville, Ill. He was educated at the University of Illinois, from which he received the degree of B.S. in 1920. He joined the Illinois Glass Company at Alton, Ill., in 1921, and the Owens-Illinois Glass Company in 1930 when the Owens Bottle Company and the Owens Glass Company were merged.

Harry L. Frevert has been elected a member of the board of directors and of the executive committee of **The Baldwin Locomotive Works,** to fill the vacancies caused by the resignation of George H. Houston recently. Mr. Frevert is president of The Midvale Company.

Arthur D. Neale, for 25 years with the Canadian Car & Foundry Co., Ltd., Montreal, Canada, serving as vice-president of that company during the past 10 years, has joined the **Holden Company, Ltd.,** also of Montreal, as vice-president, in place of **J. D. Scott,** retired.

A. J. Hazlett, formerly president of the Eastern Rolling Mill Company, Baltimore, Md., has been appointed manager of the strip-sheet sales department of the **Jones & Laughlin Steel Corporation,** Pittsburgh, Pa., to succeed **William Miller,** who has been appointed district manager of the Detroit office.

W. H. Rodgers has been appointed engineering manager of the eastern district, with headquarters at New York, for the **Westinghouse Electric & Manufacturing Company,** East Pittsburgh, Pa. He succeeds **R. E. Powers,** who has been appointed northwestern district service manager, with headquarters at Chicago. Mr. Rodgers entered the Westinghouse service in 1922, and, for nearly 15 years worked on electrical supply and distribution problems.

Arthur Roeder, president of the **Colorado Fuel & Iron Corporation,** has been elected chairman of the board, and has been succeeded by **W. A. Maxwell, Jr.,** vice-president in charge of operations. Mr. Roeder was born in 1884 at Pleasantville, N. J., and graduated from Cornell University, College of Civil Engineering, in 1907. In 1910, he was employed as a junior engineer by the City of Newark, and later served as salesman, sales manager, production manager, and assistant general manager for Robert H. Ingersoll & Brother. During this period he spent

Arthur Roeder

six months on sales organization work in Europe, principally Great Britain. Later he entered the employ of the United States Radium Corporation as treasurer, and later became president. In 1926 he was elected executive vice-president of the American Linseed Company, and in 1929, he was elected president of the Colorado Fuel & Iron Corporation. He also served as receiver and trustee from 1933 to 1936 during reorganization proceedings.

Mr. Maxwell was born in 1879 at Ardmore, Pa., and attended Pennsylvania State College. From 1900 to 1902 he was employed in the Philadelphia Post Office, and from the latter year to 1919 worked for the Carnegie Steel Company at Homestead, Pa., Sharon, Youngstown, Ohio and Homestead, as laborer, foreman, assistant superintendent, and superintendent, open hearth department. In the latter year he was appointed assistant general superintendent of the Midvale Steel & Ordnance Company at Johnstown, Pa., which position he held until 1920, when he entered the employ of the Inland Steel Company at Indiana Harbor, Ind., as general superintendent. He resigned from the latter position in 1927 to become production manager of the Colorado Fuel & Iron Corporation, which position he held until 1929, when he was elected vice-president in charge of operations.

W. A. Maxwell, Jr.

OBITUARY

David B. Carse, who acted as a member of an advisory committee during the formation of the United States Steel Corporation, in 1903-1907, and who later engaged in the private practice of engineering as D. B. Carse & Co., New York, died in New York on October 30 of bronchial pneumonia at the age of 74.

G. LaRue Masters, vice-president in charge of sales of the National Lock Washer Company, Newark, N. J., whose death on October 25 was reported in the *Railway Age* of October 29, started his early career in the paper business. He later served as manager and then as president of Unger Brothers, silversmiths. During the World war, Mr. Masters worked with the aircraft industry and after the war, became associated with the National Lock Washer Company in the car equipment department and later became vice-president in charge of all sales of the company. Some years ago, he was elected a director of the company and was serving as a director and vice-president at the time of his death.

G. LaRue Masters

Construction

CHESAPEAKE & OHIO.—The Interstate Commerce Commission, Division 4, has extended from December 31, 1938, to December 31, 1940 the time within which this company may complete an extension of its railroad in Raleigh County, W. Va.

PITTSBURGH & WEST VIRGINIA.—The existing bridge carrying single main track of this company over Brownsville road, in Baldwin township, Pa., is to be altered and reconstructed. The Pennsylvania Public Utility Commission has ordered this work to permit improvements to surrounding highways. The estimated cost of temporary and permanent bridge structures to carry out part of these improvements is $94,500.

Equipment and Supplies

October Orders Indicate Upturn

Roads buy 29 locos. and 2,435 freight cars; also order 33,500 tons of rail

Domestic equipment manufacturers received orders during October for a total of 29 Diesel-electric locomotives and 2,435 freight cars; no passenger-train car orders were received. Totals for the year thus far are thereby brought to 130 locomotives, 11,841 freight cars and 118 passenger-train cars.

These figures may be compared with October, 1937, when 21 freight cars comprised the total for the month, no locomotive or passenger-train cars having been ordered. Totals in equipment purchases for the corresponding 10 months of 1937 were 278 locomotives, 47,826 freight cars and 471 passenger-train cars.

There might also be noted the announcement of one road to build 25 locomotive tenders and the purchase by another of 25 express cars, which are reported separately in this issue. The carriers ordered 33,500 tons of rail during October, which brings the total for the year thus far to 230,115 tons.

Domestic Equipment Orders Reported In Issues Of The Railway Age In October, 1938

LOCOMOTIVES

Date	Name of Company	No.	Type	Builder
Oct. 29	New York Central	20	Diesel-elec. Sw.	Electro-Motive Corp.
		9	Diesel-elec. Sw.	American Locomotive Co.

FREIGHT CARS

Oct. 29	Nevada Consolidated Copper Corp.	30	Air dump	Austin-Western Road Mach. Co.
Oct. 29	Board of Transportation City of New York	4	Flat	St. Louis Car Co.
		1	Crane	Magor Car Corp.
Oct. 29	Southern	1,300	Box	Pullman-Standard
		1,000	Gondola	Mt. Vernon Car
		100	Stock	Ralston Steel Car Co.

LOCOMOTIVES

Rock Island Dismantling Program

THE CHICAGO, ROCK ISLAND & PACIFIC has undertaken a program for the dismantling of freight cars and locomotives which is being carried out at the rate of 200 cars or more per month. During September, 295 freight cars and 4 locomotives and in October 448 freight cars and 18 locomotives were dismantled, while in November 200 freight cars or more and 17 locomotives will be dismantled.

FREIGHT CARS

THE ILLINOIS CENTRAL is constructing 100 flat cars 52-ft. long and 10-ft. 4-in. wide in its shops at Centralia, Ill., the underframes having been fabricated at its Nonconnah shops at Memphis, Tenn. The work will cost approximately $145,000 not including parts of 100 flat cars of smaller sizes that will be dismantled and used.

THE MISSOURI PACIFIC has just completed the construction of 100 50 ton 45-ft. flat cars at its DeSoto, Mo., shops.

THE NAVY DEPARTMENT opened bids November 1 for cars for service at various navy yards. Low bidders were the Magor Car Corp., 39 flat cars; Greenville Steel Car Co., 4 box cars; and Pressed Steel Car Co., 3 narrow-gage flat cars. Inquiry for this equipment was reported in *Railway Age* of October 15.

PASSENGER CARS

THE SOUTHERN has agreed to buy, subject to the approval of the Interstate Commerce Commission as to the issuance and sale of securities to finance the cost, 25 all-steel, 70-ft. express cars from the Bethlehem Steel Company. Inquiry for this equipment was reported in the *Railway Age* of October 15, page 570.

SIGNALING

CHICAGO & NORTH WESTERN.—Sealed proposals will be received by this road, Chicago, until 2:00 p. m. (c.s.t.) November 29, 1938, for furnishing the materials for one railroad grade crossing flashing light signal installation to be installed under the federal grade crossing program in the State of Wyoming. C. T. Dike, vice-president and chief engineer, Chicago, should be addressed in this connection.

THE ST. LOUIS SOUTHWESTERN RAILWAY COMPANY OF TEXAS.—Berryman Henwood, trustee, has placed an order with the Union Switch & Signal Co., covering materials for the control of the switch and signal functions at the relocated Lufkin Branch connection. A "B-30" control machine located in the dispatcher's office at Tyler, Texas—a distance of two miles from the connection point—will control and operate the signaling at the junction, with the work involving searchlight signals with electric switch movement and control apparatus — the relays, rectifiers, etc., required at the junction point to be installed in a steel relay house, with the field work to be carried out by the Railway Company's regular signal construction forces.

Financial

BALTIMORE & OHIO.—*Operation.*—The Interstate Commerce Commission, Division 4, has authorized this company to continue the operation, under trackage rights, over the Pittsburgh & Lake Erie between McKeesport, Pa, and New Castle Junction 58 miles.

BALTIMORE & OHIO.—*Interest Reduction Plan Approved.*—The Interstate Commerce Commission, Division 4, has approved the issuance of certain securities by this company so that it can carry out its financial readjustment plan which was detailed in the *Railway Age* for September 10, page 390. Under the plan, the annual fixed charges would be reduced from $31,421,742 to $19,644,679, and the contingent interest would be $11,376,435.

CHESAPEAKE & OHIO.—*Dissolution of Chesapeake Corporation.*—Dissolution of the Chesapeake Corporation, intermediary holding company through which the Alleghany Corporation controls the C. & O. by 31 per cent stock ownership and substantial holdings in the Erie and Pere Marquette, was voted by its directors at a meeting held in New York on November 2. Stockholders voted for liquidation on June 14. Details of the plan, which will probably be distributed to stockholders shortly, have not yet been made public. Chesapeake directors set November 28 for a stockholders' meeting to consider the plan.

CHICAGO, BURLINGTON & QUINCY-GREEN BAY & WESTERN.—*Joint Operation Over the Winona Bridge.*—These companies have asked the Interstate Commerce Commission for authority to operate under a contract for joint use over the line of the Winona Bridge between Winona, Minn., and East Winona, one mile.

ELGIN, JOLIET & EASTERN-CHICAGO, LAKE SHORE & EASTERN, JOLIET & BLUE ISLAND. —*Merger and Issuance of Securities.*—These companies have asked the Interstate Commerce Commission for authority to merge their properties into the Elgin, Joliet & Eastern. The Elgin, Joliet & Eastern has also asked for authority to issue 91,000 shares of common capital stock of a par value of $100 a share and to assume liability for $9,000,000 of 4½ per cent first mortgage gold bonds of the Chicago, Lake Shore & Eastern.

ERIE.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon the 4.06-mile section of its New City branch between Nanuet, N. Y., and New City.

LOUISVILLE & NASHVILLE.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Iron City, Tenn., to Collinwood, 16.6 miles.

LOUISIANA & ARKANSAS.—*Promissory Note with R. F. C. Guarantee.*—This road has applied for Interstate Commerce Commission approval of a transaction whereby it would issue a three-year 2½ per cent promissory note for $350,000 guaranteed by

the RFC. The proceeds would be used for a maintenance and improvement program, principally for relaying about 8,000 tons of rail.

MISSOURI-KANSAS-TEXAS.—*R. F. C. Loan.*—This company has applied to the Interstate Commerce Commission for approval and to the Reconstruction Finance Corporation for a loan of $2,824,000, the proceeds to be used to pay interest, taxes, rental and equipment obligations falling due between December 30 and March 31, 1939.

OKOLONA, HOUSTON & CALHOUN CITY.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Okolona, Miss., to Calhoun City, 37.3 miles.

SOUTHERN.—*Equipment Trust Certificates and Sale to R. F. C.*—The Interstate Commerce Commission, Division 4, has authorized this company to assume liability for $500,000 of four per cent equipment trust certificates, maturing in nine annual installments, beginning February 15, 1941, as follows: $60,000 on February 15, 1941, and $55,000 on February 15 of each year thereafter to and including February 15, 1949. The certificates have been sold at par and accrued dividends to the Reconstruction Finance Corporation. At the same time the commission approved the purchase for itself by the R. F. C., at a price not in excess of their principal amount and accrued dividends, $500,000 of four per cent equipment trust certificates, of this company, when issued.

Commissioner Mahaffie felt called upon to defend Division 4's action in this case in view of the criticism leveled at it by Commissioner Porter in the Seaboard equipment trust case which was reviewed in the *Railway Age* for October 15, page 571. Commissioner Mahaffie pointed out that Commissioner Porter had expressed fear that the market for equipment trusts would be ruined if the commission granted authority to issue them for the full amount of the equipment instead of for the customary 75 per cent. He went on to say that "The certificates are to be sold to the Reconstruction Finance Corporation. It is a governmental agency created by Congress to help stem the depression and to aid in recovery. Probably few better means to that end are available than the building of needed railroad equipment. The Southern guarantees payment. The credit of that carrier, as well as the physical value of the equipment itself is back of the obligation. The Southern, by the use of the equipment will profit. It is greatly needed for current operations. Consequently, no receiver or trustee of the Southern property, if in charge of its operations, could afford to default and so lose the benefit of its use."

Commissioner Mahaffie also observed that during federal control the carriers issued some $346,000,000 of equipment certificates representing the entire cost of equipment purchased by the Director General and allocated to the various roads. "Shortly after the termination of federal control," he continued, "these securities were distributed to the public. Substantially all have been paid off. From 1933 to 1935 the Public Works Administration disbursed to railroads over $200,000,000 in large part for the purchase of equipment, taking in payment equipment trust certificates approved by us. In many cases these certificates represented the entire cost of the equiment covered by them. Notwithstanding these facts, equipment certificates during the period since 1920, and at present, generally are considered sound securities."

Commissioner Porter again dissented for the same reasons expressed in the Seaboard case, saying that he did not think that six per cent was sufficient for the assured safety of equipment trust certificates. Division 4, in the instant case, granted authority to issue the certificates for about 94 per cent of the purchase price of the equipment.

He answered Commissioner Mahaffie's argument regarding the issuance of certificates for the full amount after the period of government control by observing that the period following the World War was one of prosperity and expanding business for the carriers while "at present it is a diminishing one, and no person is wise enough to foretell the future."

"Neither is it an answer to say," he concluded, "that from 1933 to 1935 the Public Works Administration disbursed to railroads over $200,000,000 in large part for the purchase of equipment, taking in payment equipment trust certificates. Sufficient time has not yet elapsed to determine what the outcome as to those certificates may be. Suffice it to say, I am abundantly satisfied that the time is now at hand when a more conservative position must be taken with respect to the issuance of fixed indebtedness by our rail carriers."

SOUTHERN - ATLANTIC & DANVILLE.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized the Atlantic & Danville to abandon its Claremont Branch extending from James River Junction, Va., to Claremont wharf on the James River, 50.4 miles. The commission has also dismissed the application of the Southern for authority to abandon operation of the branch in view of the fact that such authority had already been granted in a previous decision.

Average Prices of Stocks and Bonds

	Nov. 1	Last week	Last year
Average price of 20 representative railway stocks.	31.73	32.43	32.92
Average price of 20 representative railway bonds..	61.32	61.59	68.97

Dividends Declared

Bangor & Aroostook.—62¢, quarterly; Preferred, $1.25, quarterly, both payable January 1 to holders of record November 29.

Cleveland & Pittsburgh. — Guaranteed, 87½¢, quarterly; Special Guaranteed, 50¢, quarterly, both payable December 1 to holders of record November 10.

Kansas City, St. Louis & Chicago.—6 Per Cent Guaranteed Preferred, $1.50, quarterly, payable November 1 to holders of record October 21.

Norfolk & Western.—$2.50, quarterly, payable December 19 to holders of record November 29.

Pittsburgh, Bessemer & Lake Erie.—6 Per Cent Preferred, $1.50, semi-annually, payable December 1 to holders of record November 15.

Portland & Ogdensburg.—50¢, quarterly, payable November 30 to holders of record November 21.

Reading.—First Preferred, 50¢, quarterly, payable December 8 to holders of record November 18.

Railway Officers

EXECUTIVE

L. R. Capron, assistant vice-president, traffic department of the Chicago, Burlington & Quincy, with headquarters at Chicago, has been elected vice-president in

L. R. Capron

charge of traffic to succeed **Horace H. Holcomb,** who retired on November 1.

Mr. Capron was born at Litchfield, Ill., on June 27, 1888, and entered railway service in April, 1902, as an office boy on the Chicago, Burlington & Quincy. After a brief absence from railroad work, he became office boy in August, 1903, in the office of the auditor of freight receipts of the Northern Pacific. After serving in various clerical positions, he was promoted to chief rate clerk in May, 1910, and in December, 1913, he was advanced to assistant chief clerk. He was promoted to chief clerk to the second vice-president in October, 1914, and in April, 1915, he was advanced to assistant general freight agent, with headquarters at St. Paul, Minn. In March, 1920, he was transferred to Seattle, Wash., and in July, 1921, he was promoted

Horace H. Holcomb

to assistant freight traffic manager, with headquarters at St. Paul. In March, 1924, he was advanced to freight traffic man-

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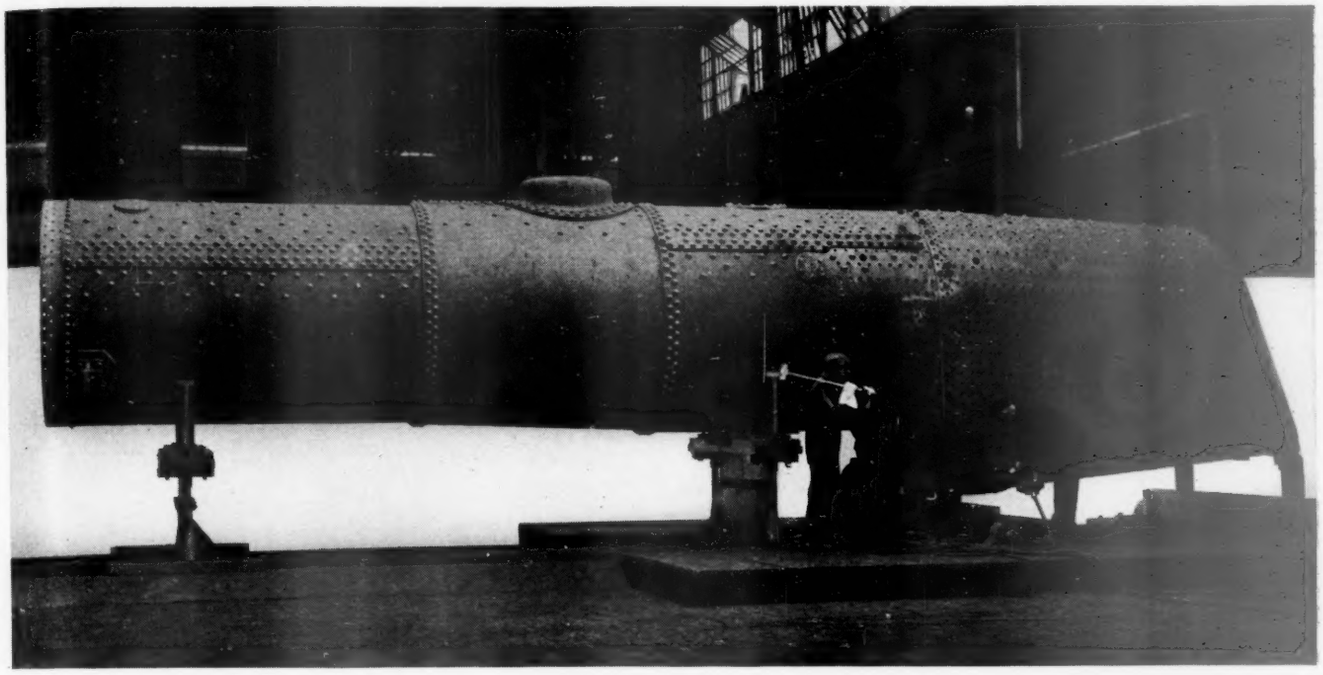
METHODS AND MACHINERY THAT GUARD LIMA QUALITY



PROPERLY ALIGNED BOILERS

. . . are essential to low maintenance

Perfect alignment between boiler shell and back end both horizontally and vertically are essential to a low-maintenance locomotive.

As boilers grew larger and longer this became more difficult of accomplishment.

At Lima the problem is solved by the boiler jig pictured above. By means of this, the boiler back end is accurately lined up with the shell of the boiler before the rivet holes are reamed. Perfect alignment is assured. It's by such methods that Lima has developed its reputation for building sound, low-maintenance power

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

ager, and in October, 1937, he was appointed assistant vice-president, traffic department, of the Chicago, Burlington & Quincy, with headquarters at Chicago.

Mr. Holcomb was born at Platteville, Wis., on October 12, 1867, and entered railway service in 1889 as a clerk in the local freight office of the Burlington at Chicago. After service in a number of clerical positions in the freight department at Chicago, he was promoted, in 1908, to assistant general freight agent, with headquarters at Chicago. Four years later he was advanced to general freight agent of the lines west of the Missouri River, with headquarters at Omaha, Neb., and in 1917, he was promoted to assistant freight traffic manager, with headquarters at Chicago. Mr. Holcomb was advanced to freight traffic manager, with the same headquarters, in 1920, and on December 10, 1928, he was elected vice-president in charge of traffic, assuming that position on January 1, 1929.

At a meeting of the board of directors of the Lehigh & New England held on September 22, **Robert V. White** was elected president of that road, succeeding **S. D. Warriner,** resigned. Mr. White's

Robert V. White

election was approved by the Interstate Commerce Commission on October 24. Mr. Warriner will continue as chairman of the board. A sketch of Mr. White's career was published in the *Railway Age* of September 17, in connection with his election as president of the Lehigh Coal & Navigation Company, of which the Lehigh & New England is a subsidiary.

Charles I. Sturgis, whose retirement on October 26 as vice-president, secretary and treasurer of the Chicago, Burlington & Quincy, with headquarters at Chicago, was announced in the *Railway Age* of October 29, was born in Paris, France, on July 21, 1860, and entered railway service in 1880 as a clerk in the local freight office of the Burlington at Chicago. He was transferred to the office of the general agent in Denver, Colo., in 1881, and was promoted to cashier of that office in 1882. In 1884, he was appointed paymaster's clerk at Chicago, and the following year was promoted to assistant paymaster. In 1886, he was advanced to paymaster and in 1888, he was promoted to assistant general auditor. Mr. Sturgis was advanced to general auditor in 1893, and in 1918, he was promoted to comptroller. In May, 1921, he

Charles I. Sturgis

was elected secretary and treasurer and in November of that year he was elected vice-president, secretary and treasurer.

FINANCIAL, LEGAL AND ACCOUNTING

A. D. McLane, custodian of contracts and records of the Chicago, Burlington & Quincy at Chicago, has been promoted to assistant secretary succeeding **Edith J. Alden,** whose promotion to secretary and assistant treasurer was announced in the *Railway Age* of October 29.

James B. Osborne, statistician on the Chesapeake & Ohio at Cleveland, Ohio, has been promoted to attorney for the C. & O. and the New York, Chicago & St. Louis, with the same headquarters, **J. S. Dortch, Jr.,** has been appointed attorney on the C. & O., with headquarters at Richmond, Va.

G. W. V. Shaw, chief clerk to the chairman and president of the Canadian National at Montreal, Que., has been appointed assistant secretary of that company and various subsidiary and allied companies, a position which has been left vacant since August, 1935, when W. H. Hobbs was promoted from assistant secretary to secretary.

A. R. Seder, comptroller of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn., has been appointed assistant comptroller of the Chicago & North Western, with headquarters at Chicago, a newly created position.

Mr. Seder will continue in his capacity as comptroller of the Omaha, and **E. E. Rusch,** auditor of disbursements of that road, with headquarters at St. Paul, has been promoted to general auditor, a newly created position.

M. Carter Hall, general solicitor for the Chesapeake & Ohio and the Pere Marquette, with headquarters at Richmond, Va., has had his jurisdiction extended over the New York, Chicago & St. Louis, and **Jervis Langdon, Jr.,** general attorney on the C. & O. and the Pere Marquette, with headquarters at Richmond, Va., has been transferred to Cleveland, Ohio, and his jurisdiction has been extended to include the Nickel Plate. **Horace L. Walker,** general attorney of the C. & O., with headquarters at Richmond, Va., has had his jurisdiction extended to include the Pere Marquette and the Nickel Plate. The headquarters of Mr. Hall and Mr. Walker remain at Richmond.

Andrew T. Williams, whose election as treasurer of the Chicago, Burlington & Quincy, with headquarters at Chicago, was announced in the *Railway Age* of October 29, was born at Chicago on September 9, 1871, and entered railway service in August, 1889, as a clerk in the office of the vice-president and treasurer of the Burlington. In 1903, he was promoted to assistant paymaster, and in 1911, he was advanced to assistant cashier. He was promoted to cashier in 1918, and in Novem-

Andrew T. Williams

ber, 1921, he was elected assistant secretary and assistant treasurer.

Edith J. Alden, whose promotion to secretary and assistant treasurer of the Chicago, Burlington & Quincy, with headquarters at Chicago, was announced in the *Railway Age* of October 29, was born at

Edith J. Alden

Burlington, Iowa in May, 1884, and first entered railway service in May, 1918, in connection with the railroad's participation in the Liberty Loan drives of that year,

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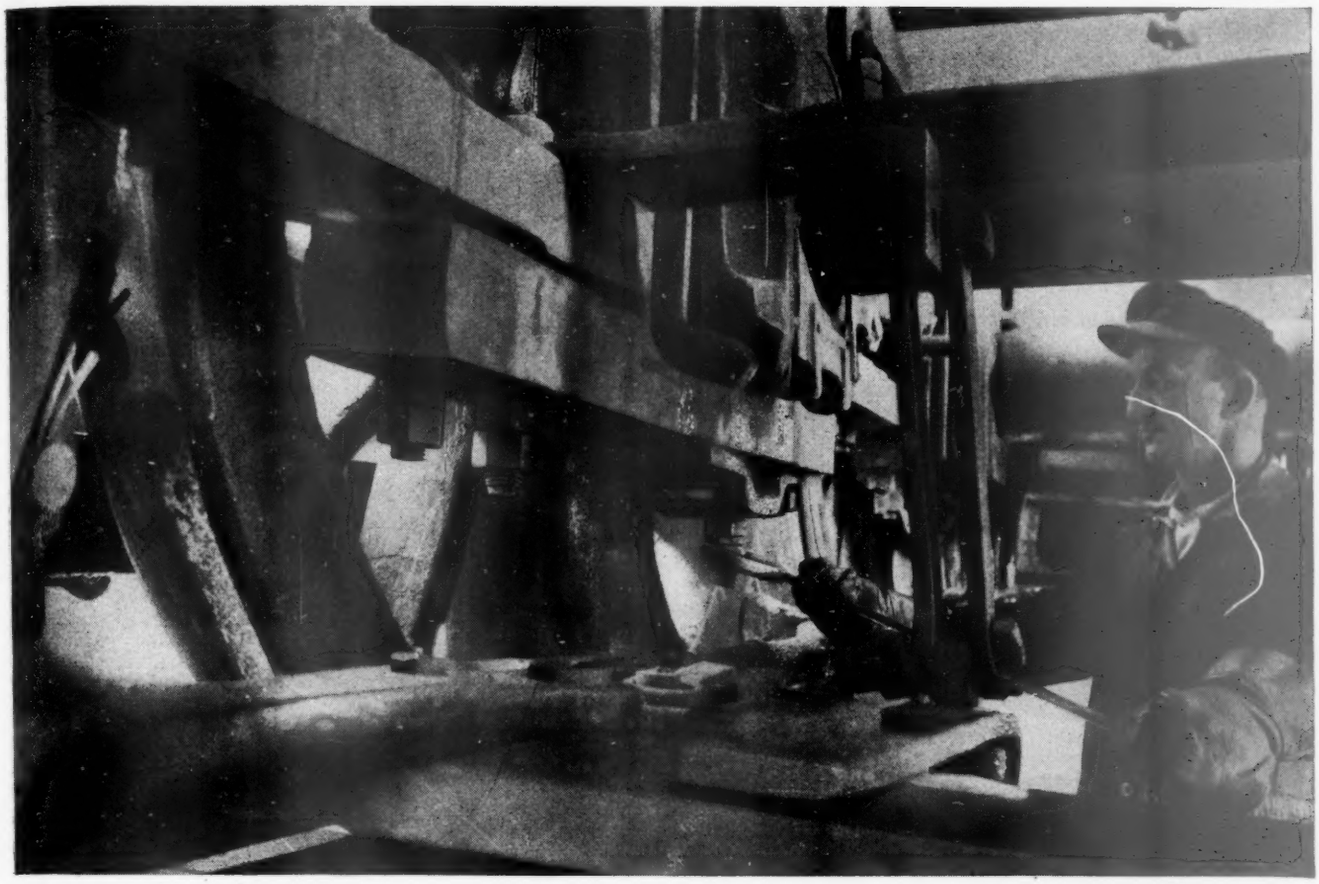
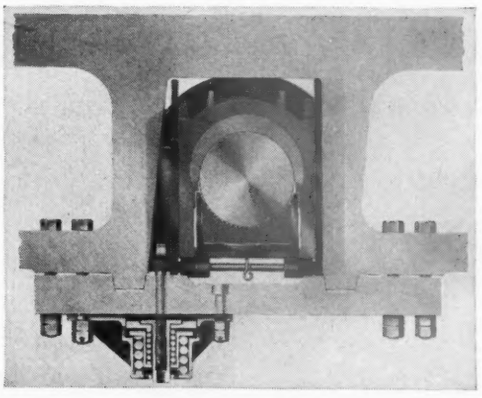


If it's *right* when it's cold . . . it's *wrong* when it's hot

. . . UNLESS IT'S AUTOMATICALLY CONTROLLED

Hand adjusted driving box wedges do not have enough latitude to insure a constant fit under the varying temperature conditions encountered in the driving box. » » » Proper fit can be assured only when the wedge member is constantly adjusted as the driving box expands and contracts . . . Franklin Automatic Compensators and Snubbers make this adjustment . . . *Automatically* . . . while the locomotive is running. In addition, abnormal shocks are taken care of by a heavy outer spring. » » » Incorporate Franklin Automatic Compensators and Snubbers and insure accurate adjustment . . . easier riding . . . increased availability for service . . . *at all times.*



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Because material and tolerances are just right for the job, genuine Franklin repair parts give maximum service life.

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NEW YORK CHICAGO MONTREAL

assisting her father who was assistant to the comptroller. In 1922, she was promoted to assistant secretary, the position she held at the time of her recent promotion.

James C. James, general solicitor of the Chicago, Burlington & Quincy, with headquarters at Chicago, has been promoted to general counsel, with the same

James C. James

headquarters, succeeding **E. M. Shelton,** who retired on November 1.

Mr. James was born at Aurora, Ill., on February 21, 1882, and graduated from the University of Wisconsin in 1904. He also attended George Washington University Law School. He was admitted to the bar in 1905, and from 1907 to 1910, he was assistant state's attorney of Kane Co., Ill. In 1910, he became a member of the law firm of Alschuler, Putnam & James at Aurora, and in 1917, he was appointed assistant to the Illinois district attorney for the Burlington, with headquarters at Chi-

E. M. Shelton

cago. Mr. James was promoted to general attorney in 1919, and in July, 1924, he was advanced to general solicitor.

Mr. Shelton was born at Torrington, Conn., on October 3, 1868, and graduated from Yale University in 1890. After studying law in an office at Washington, Iowa, he was admitted to the bar in that state in 1893. He entered railway service in the office of the general counsel at Burlington, Iowa, in November, 1897, and on May 1, 1907, he was transferred to Chicago. Mr. Shelton subsequently served as assistant to general counsel and assistant general counsel, and on July 1, 1937, he was advanced to general counsel.

F. M. Seiberlich, assistant freight claims agent of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., has been promoted to freight claim agent of that road and also of the Duluth, South Shore & Atlantic and the Mineral Range Railroad, with the same headquarters, succeeding **J. T. Ludlum,** who retired on November 1.

Mr. Ludlum was born at Minneapolis on February 4, 1866, and graduated from the University of Minnesota in 1887. He entered railway service in May, 1893, as an expense clerk in the local freight station of the Northern Pacific at Minneapolis. He served in various minor positions on the Northern Pacific, becoming assistant cashier, but left in November, 1897 to go with the Minneapolis & St. Louis at Minneapolis in the same capacity. He left the M. & St. L. in May, 1899, to engage in private business, but returned to railroad service in December of the same year as an over, short and damage clerk in the freight claim department of the Soo line at Minneapolis. He was promoted to freight claims investigator in 1900, and in 1909 he was advanced to chief clerk of the freight claim department. Mr. Ludlum was promoted to assistant freight claim agent in 1912, and on July 1, 1927, he was advanced to freight claim agent. Mr. Ludlum was elected vice-chairman of the Chicago Claim Conference in 1932, and served as chairman of that conference from May, 1933, until February, 1934.

OPERATING

A. L. Tenner has been appointed trainmaster on the Union Pacific, with headquarters at Hood River, Ore.

William Davis, assistant superintendent of terminals of the Cleveland, Cincinnati, Chicago & St. Louis, (New York Central) with headquarters at Indianapolis, Ind., has been appointed general manager of the Peoria & Eastern, with headquarters at Indianapolis, succeeding **Luther S. Rose,** who retired on October 31, after more than 42 years of continuous service with this company in the engineering and operating departments.

Charles L. Franklin, trainmaster on the Chicago, Rock Island & Pacific, with headquarters at El Reno, Okla., has been promoted to superintendent of the Chicago Terminal division, with headquarters at Chicago, succeeding **Harry P. Justin,** who retired on November 1. Mr. Justin was born in Rock Island, Ill., on November 2, 1871, and entered railway service in 1886 as a yard clerk on the Rock Island at St. Joseph, Mo. In 1893, he was transferred to Chicago as a switchman, and a year later he was promoted to yardmaster. He was advanced to general yardmaster in 1905, and in 1912, he was promoted to trainmaster, with headquarters at Chicago. Mr. Justin was promoted to superintendent of the Chicago Terminal division on February 1, 1933.

Effective November 1, the Chicago Terminals of the Atchison, Topeka & Santa Fe, has been made a division and is no longer under the jurisdiction of the Illinois division, and **C. W. Philhour,** superintendent of the Chicago Terminals, has been appointed superintendent of the new Chicago Terminals division. Effective the same date, the office of superintendent of the Missouri division at Marceline, Mo., has been abolished and the jurisdiction of **G. H. Minchin,** superintendent of the Illinois division, with headquarters at Chillicothe, Ill., has been extended to include the Missouri division.

R. P. Russell, superintendent of car service of the Pennsylvania, with headquarters at Philadelphia, Pa., has been appointed superintendent of the relief and pension departments, succeeding **Eden B. Hunt,** who has retired after more than 52 years of continuous service with the P. R. R. **J. B. Phelan,** assistant superintendent of car service, has been appointed superintendent of car service, succeeding Mr. Russell.

Mr. Hunt was born at Stockton, N. J., on October 12, 1868, and entered the service of the Pennsylvania in the office of the superintendent of the voluntary relief department on May 10, 1886. He became assistant superintendent of the department in 1905 and in 1911 was appointed superintendent of the relief department and agent of the pension department. Upon the consolidation of the relief and pension departments of the eastern and western lines of the railroad, effective October 1, 1920, Mr. Hunt became superintendent of both departments. He has also, since 1923, been secretary of the Pennsylvania Railroad Employees Provident and Loan Association.

J. D. Beltz, superintendent of the Pittsburgh division of the Baltimore & Ohio, with headquarters at Pittsburgh, Pa., has been appointed general superintendent of the Pennsylvania district, with the same headquarters, to succeed **J. M. Scott,** who has retired from active service at his own request, after 46 years of continuous railroading. **John Hewes, Jr.,** superintendent of the Newark division, with headquarters at Newark, Ohio, has been transferred in the same capacity to the Pittsburgh division, succeeding Mr. Beltz. **H. H. Harsh,** division engineer at Akron, Ohio, has been appointed superintendent of the Newark division, succeeding Mr. Hewes.

Mr. Scott was born on November 1, 1870, at Charleston, W. Va., and entered railroad service with the Chesapeake & Ohio in 1891 as an operator. One year later, he entered the employ of the Cincinnati, Hamilton & Dayton (Baltimore & Ohio) as an operator, being promoted to train dispatcher in 1895 and to trainmaster in 1903. Mr. Scott was appointed superintendent in 1905, which position he held until August 1, 1910, when he went with the Kansas City Southern. On January 1, 1911, he became chief inspector for the Indiana State Railroad Commission. Mr.

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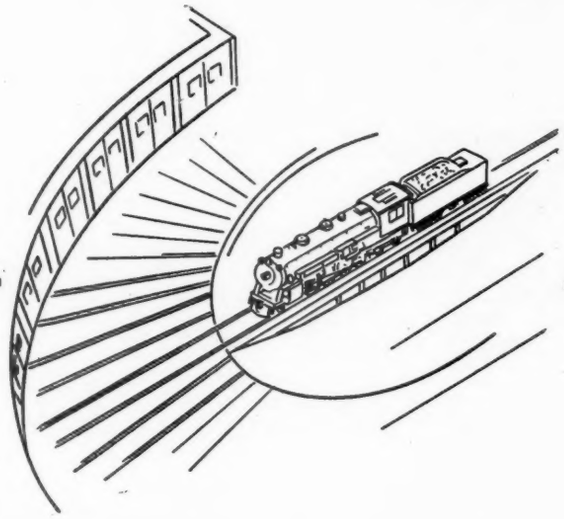
SPECIAL BRICK SHAPES ...are a nuisance



The initial standardization of Arch Brick shapes and sizes and Arch tube spacing was the work of the American Arch Company.

It is a work that goes forward constantly and saves the Stores and Mechanical Departments a vast amount of trouble.

The easiest solution to many a locomotive Arch engineering difficulty would be to use a special brick shape. But this the American Arch Company is willing to do only as a last resort. Over 50% of all Arch Brick is covered by 6 separate patterns.

The insistence of American Arch Company on adhering to standards has simplified the work of the Storekeeper and Maintenance Man. It is only one of the many ways in which American Arch Company is serving the railroads.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

Scott became supervisor of transportation for the Baltimore & Ohio on August 5, 1912, being advanced to assistant superintendent of the Cumberland division at Keyser, W. Va., on January 1, 1913. On May 15, 1913, he was promoted to superintendent of the Monongah division at Grafton, W. Va., becoming general superintendent in charge of the West Virginia district on November 1, 1917. On July 15, 1936, Mr. Scott was appointed general superintendent of the greater Pennsylvania district.

William Wallace, superintendent of the Champlain division of the Delaware & Hudson, with headquarters at Plattsburg, N. Y., has been transferred in the same capacity to the Susquehanna division, with headquarters at Oneonta, N. Y., succeeding **M. F. Leamy,** who has retired after 49 years of service. The jurisdiction of **J. E. Fairhead,** superintendent of the Saratoga division, has been extended to include the Champlain division. The title of **C. H. House,** trainmaster of the Champlain division, has been changed to assistant superintendent.

Mr. Leamy was born on April 27, 1878, at West Rutland, Vt., and entered railway service on July 1, 1890, as switch tender for the Delaware & Hudson at West Rutland. From January, 1891, to January, 1901, he served as telegraph operator there; from January, 1901, to October, 1902, relief agent on the Champlain, Saratoga and Susquehanna divisions at Albany, N. Y.; October, 1902, to November, 1905, train dispatcher, Champlain and Saratoga divisions, at Albany; November, 1905, to January, 1913, chief dispatcher, Saratoga division, Albany; from January to November, 1913, assistant trainmaster of the Champlain division at Plattsburg, N. Y., from November, 1913, to April, 1914, assistant trainmaster of the Saratoga division at Albany; April, 1914, to March, 1916, trainmaster of the same division; March to May, 1916, acting superintendent of the Champlain and Saratoga divisions; May to July, 1916, trainmaster of the Saratoga division; July, 1916, to January, 1917, acting superintendent Champlain and Saratoga divisions; January to August, 1917, trainmaster Saratoga division, and from August, 1917, to December, 1918, superintendent same division. From December, 1918, to January, 1921, Mr. Leamy was superintendent of the Champlain division at Plattsburg, being transferred in the same capacity to the Susquehanna division at Oneonta on the latter date. Mr. Leamy's entire service has been with the Delaware & Hudson.

TRAFFIC

T. J. Stewart, assistant general passenger agent of the Central of Georgia, with headquarters at Savannah, Ga., has been appointed general passenger agent, with the same headquarters, succeeding **John W. Blount,** deceased.

Andrew L. Kreamelmeyer, whose promotion to general freight agent on the St. Louis-San Francisco, with headquarters at St. Louis, Mo., was announced in the *Railway Age* of October 29, was born on a farm near Steelville, Mo., on April 7, 1904, and attended Jones Commercial College, St. Louis, Mo. He entered railway service on December 1, 1921, as a stenographer in

Andrew L. Kreamelmeyer

the legal department at St. Louis, and in 1923, he was promoted to secretary to the general attorney and commerce counsel. On October 1, 1927, he was appointed secretary to the vice-president in charge of traffic, and on August 1, 1931, he was advanced to chief clerk to the general traffic manager. Mr. Kreamelmeyer was promoted to assistant to general traffic manager on December 1, 1934.

Harry G. Gillis, chief of the passenger tariff bureau of the New York Central, has been appointed assistant general passenger agent, with headquarters at New York, succeeding **Irving M. Taylor,** deceased.

ENGINEERING AND SIGNALING

H. F. Reilly, supervisor of track of the Lehigh Valley, with headquarters at Wilkes-Barre, Pa., has been transferred in the same capacity to Easton, Pa., succeeding **J. A. Maughan,** who has been transferred to Pittston Junction, Pa.

A. B. Truman, division engineer on the Atchison, Topeka & Santa Fe, with headquarters at Las Vegas, N. M., has been transferred to Dodge City, Kan., succeeding **R. G. Whyman,** who in turn, has been transferred to Las Vegas.

F. Helm, district engineer, western district, Eastern lines, with headquarters at Topeka, Kan., has been appointed district engineer, Eastern district, Eastern lines, with the same headquarters, succeeding **J. L. Starkie,** who in turn, has been appointed district engineer, Western district, Eastern lines, with headquarters as before, at Topeka.

Effective November 1, the office of division engineer of the Atchison, Topeka & Santa Fe at Marceline, Mo., has been discontinued, and **D. M. Rankin,** division engineer at that point has been transferred to the Oklahoma division, with headquarters at Arkansas City, Kan., succeeding **K. W. Claybaugh,** who has been assigned to other duties. The jurisdiction of **T. H. McKibben,** division engineer of the Illinois division, with headquarters at Chillicothe, Ill., has been extended to include the Chicago Terminal division and the Missouri division, and the jurisdiction of **H. M. Swope,** division engineer, Eastern division, with headquarters at Emporia, Kan., has been extended to include the Kansas City division.

J. W. Purdy, division engineer of the Baltimore & Ohio, with headquarters at Wheeling, W. Va., has been transferred in the same capacity to Akron, Ohio, to succeed **H. H. Harsh,** whose appointment as superintendent of the Newark (Ohio) division is noted elsewhere in these columns. **Guy Long,** assistant division engineer at Wheeling, has been appointed division engineer there, succeeding Mr. Purdy.

Raymond H. Mitchell, track supervisor on the Boston & Maine, with headquarters at Salem, Mass., has been appointed assistant division engineer of the Portland division, with headquarters at Dover, N. H. Mr. Mitchell succeeds **Clifford H. Higgins,** whose promotion to division engineer of the New Hampshire division was noted in the *Railway Age* of June 11.

MECHANICAL

B. H. Barrett, general car inspector on the Chicago, Burlington & Quincy, with headquarters at Lincoln, Neb., has been promoted to superintendent of shops at Havelock, Neb., succeeding **J. D. Rezner,** who has been advanced to general car foreman at Chicago, replacing **H. H. Harvey,** who retired on November 1.

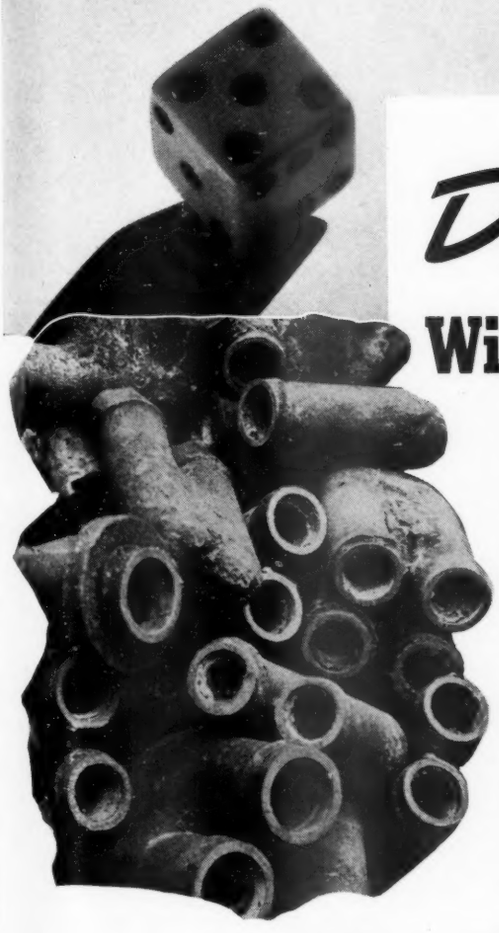
OBITUARY

Edward L. Bahls, office engineer in the chief engineer's office of the Chicago, Milwaukee, St. Paul & Pacific at Chicago, died suddenly October 27 of a heart attack.

Frederic Worthen Frost, who resigned recently as general counsel of the Pittsburgh, Shawmut & Northern, with headquarters at New York, died on October 27, at his home in Chappaqua, N. Y., after an illness of five weeks. He was 68 years old.

John Franklin Fairlamb, who retired in 1926, as auditor of revenue, Line East, of the New York Central, died on October 30, at St. John's Riverside hospital, Yonkers, N. Y., at the age of 82. Mr. Fairlamb was born on November 12, 1855, and entered railroad service as clerk on the West Shore on June 16, 1884. On July 1, 1888, he was appointed assistant auditor of passenger accounts of the New York Central. On February 1, 1890, Mr. Fairlamb became auditor of passenger accounts and on March 1, 1906, general passenger agent. He was appointed auditor of miscellaneous accounts on February 1, 1910, and auditor of revenue, Line East, on May 1, 1922, holding the latter position until his retirement on December 1, 1926.

Table of Revenues and Expenses begins on next left-hand page



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The superheater is an important part of a locomotive and its dependability should be unquestioned *during the entire life of the locomotive.*

To gamble with patch repairs at the backshop when superheater units wear out, will mean constant attention at the roundhouse and a short extended mileage life. The illustration shows the results of a patch-repair job. Note the internal and external ridges from welds. The units ultimately had to be sent to our plant for REmanufacture, where return bends were formed—not by patch welding commercial bends—but by machine-die-forging the ends of superheater tubing into return bends.

When your units wear out, have them REmanufactured at the Elesco plant; the cost is negligible and the units are dependable.

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1938

Name of road		Av. mileage operated during period	Operating revenues			Operating expenses					Operating ratio	Net from railway operation	Operating income	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic	Transportation	Total				1938	1937
Akron, Canton & Youngstown	Sept	171	$151,801	$58	$157,458	$21,656	$15,720	$12,937	$49,714	$108,825	69.1	$48,633	$35,984	$20,297	$24,447
	9 mos.	171	1,136,658	391	1,179,600	198,120	120,358	106,128	437,529	946,823	80.3	232,777	117,019	—6,317	271,669
Alton	Sept.	957	929,446	200,272	1,323,714	175,281	174,251	46,993	516,148	975,628	73.7	348,086	257,251	81,183	7,901
	9 mos.	957	7,959,404	1,852,890	11,341,881	1,505,748	1,705,126	406,011	4,819,929	9,046,262	79.8	2,295,619	1,454,906	—118,176	580,314
Atchison, Topeka & Santa Fe System	Sept.	13,500	10,382,879	1,468,564	12,997,754	1,956,627	2,682,224	426,397	4,716,642	10,138,826	78.0	2,858,928	1,631,994	1,625,300	204,081
	9 mos.	13,508	90,131,793	12,894,682	112,392,420	14,206,074	24,571,366	3,970,125	42,839,514	88,954,895	79.1	23,437,525	12,283,130	11,251,243	14,557,241
Atlanta & West Point	Sept.	93	111,232	20,411	152,304	16,679	22,047	7,826	63,980	120,653	79.2	31,651	22,864	8,482	—6,505
	9 mos.	93	820,452	211,161	1,217,962	163,205	225,447	72,053	575,853	1,130,781	92.8	87,181	—1,865	—124,953	—22,203
Western of Alabama	Sept.	133	106,355	20,495	143,957	17,693	24,928	7,720	54,640	114,058	79.2	29,899	16,511	18,420	10,863
	9 mos.	133	322,545	212,173	1,185,974	175,785	255,604	69,542	485,441	1,071,438	90.3	114,536	—6,804	17.728	83,952
Atlanta, Birmingham & Coast	Sept.	639	229,901	6,855	263,902	41,381	49,903	23,724	97,360	234,925	89.0	28,977	5,053	—8,587	—27,885
	9 mos.	639	2,094,159	162,833	2,501,178	384,063	454,543	213,978	1,008,568	2,282,544	91.3	218,634	—1,924	—205,229	—16,157
Atlantic Coast Line	Sept.	5,106	2,316,749	309,226	3,052,068	452,691	708,728	138,109	1,295,378	2,743,239	89.9	308,829	8,829	10,855	244,525
	9 mos.	5,105	24,163,939	5,756,017	33,361,170	4,006,462	6,207,394	1,322,952	13,574,637	26,666,766	79.9	6,694,404	3,094,404	1,745,301	4,219,326
Charleston & Western Carolina	Sept.	343	157,297	1,967	163,334	26,862	31,873	7,950	59,114	132,162	80.9	31,172	11,172	12,649	26,255
	9 mos.	343	1,570,128	11,491	1,620,114	232,620	297,839	71,880	588,359	1,246,739	77.0	373,375	196,375	177,235	399,465
Baltimore & Ohio	Sept.	6,431	11,040,474	815,930	12,602,774	1,030,130	2,364,709	361,241	4,384,791	8,649,363	68.6	3,953,411	3,100,115	2,714,529	2,796,130
	9 mos.	6,439	82,794,681	7,888,364	97,052,283	8,790,629	21,011,361	3,341,809	39,049,946	76,993,994	79.3	20,058,289	12,115,519	8,715,573	20,851,462
Staten Island Rapid Transit	Sept.	24	55,134	81,870	147,502	8,793	19,741	867	82,443	122,340	82.9	25,162	—3,930	—12,277	—27,630
	9 mos.	24	445,605	666,432	1,200,392	88,643	174,053	9,847	742,977	1,111,790	92.6	88,602	—168,280	—221,087	—252,312
Bangor & Aroostook	Sept.	604	242,723	12,971	274,470	101,236	91,658	5,619	94,876	318,143	115.9	—43,673	—63,565	—42,995	29,130
	9 mos.	604	4,111,992	148,623	4,419,555	988,401	810,505	53,049	1,189,894	3,276,848	74.1	1,142,707	710,997	704,961	1,102,590
Bessemer & Lake Erie	Sept.	224	1,143,533	607	1,154,095	121,044	185,776	10,699	169,873	517,713	44.9	636,382	591,075	607,289	1,037,789
	9 mos.	225	5,494,246	5,756	5,586,800	816,698	1,728,740	103,735	1,305,499	4,235,781	75.8	1,351,019	910,786	1,034,607	7,127,828
Boston & Maine	Sept.	1,955	1,923,265	592,471	2,973,805	593,513	509,458	65,916	1,353,044	2,670,668	89.8	303,137	—4,532	—207,445	409,198
	9 mos.	1,958	19,649,984	5,321,943	29,032,221	4,080,250	4,441,865	581,238	12,832,722	23,355,354	80.4	5,676,867	2,862,969	1,110,965	5,136,140
Burlington, Rock Island	Sept.	255	96,100	19,169	123,360	16,820	19,046	4,766	47,526	98,528	79.9	24,832	16,662	7,296	—6,434
	9 mos.	255	840,790	167,475	1,075,219	174,925	185,627	43,857	471,692	966,155	89.9	109,064	39,009	—55,987	—67,367
Cambria & Indiana	Sept.	37	106,640	.....	106,756	8,450	41,069	416	10,425	65,724	61.56	41,032	16,020	87,254	88,453
	9 mos.	37	825,916	.....	826,838	78,336	390,845	3,684	84,749	611,757	73.99	215,081	16,960	553,222	716,409
Canadian Pacific Lines in Maine	Sept.	234	82,295	14,543	109,582	41,470	27,311	10,175	49,525	129,627	118.4	—20,045	—30,097	—37,638	510
	9 mos.	234	1,494,521	130,542	1,739,789	364,248	355,355	90,459	648,415	1,522,131	87.5	217,658	123,379	—56,309	71,146
Canadian Pacific Lines in Vermont	Sept.	91	56,905	11,277	76,862	15,593	19,105	4,562	70,749	110,574	143.9	—33,712	—40,378	—59,633	—29,972
	9 mos.	91	434,928	85,800	613,072	135,165	202,075	39,962	537,768	956,346	156.0	—343,274	—406,093	—577,429	—337,373
Central of Georgia	Sept.	1,926	991,737	92,901	1,216,971	157,327	240,023	50,317	513,715	1,029,671	84.6	187,300	77,229	91,711	62,897
	9 mos.	1,926	8,680,229	950,672	10,903,175	1,475,043	2,169,129	473,668	4,949,405	9,758,754	89.5	1,144,421	140,702	—17,710	919,631
Central of New Jersey	Sept.	710	1,874,907	417,677	2,485,323	179,905	421,557	48,346	1,055,820	1,794,136	72.2	691,187	208,701	60,231	222,467
	9 mos.	709	16,442,983	3,434,370	21,427,386	1,307,899	3,571,439	448,081	9,735,368	15,895,960	74.2	5,531,426	1,775,241	430,879	2,015,850
Central Vermont	Sept.	430	330,550	31,203	401,422	118,649	75,167	11,784	175,432	402,495	100.3	—1,073	—31,025	—68,158	—10,785
	9 mos.	444	2,925,379	323,741	3,599,218	728,577	642,722	113,243	1,846,208	3,514,268	97.6	84,950	—162,604	—475,752	217,155
Chesapeake & Ohio	Sept.	3,102	10,007,007	276,982	10,658,790	912,300	1,772,894	189,960	2,356,233	5,523,525	51.8	5,135,265	3,796,432	3,866,548	4,073,217
	9 mos.	3,102	70,470,067	2,333,157	75,636,902	8,241,862	14,832,844	1,789,067	19,907,798	47,459,357	62.7	28,177,545	19,393,202	19,141,858	31,644,492
Chicago & Eastern Illinois	Sept.	927	930,036	113,597	1,201,995	142,976	169,964	53,160	475,568	908,793	75.6	293,202	214,202	111,041	150,484
	9 mos.	927	7,972,148	1,057,964	10,247,292	1,295,721	1,662,760	491,025	4,370,924	8,409,628	82.1	1,837,664	1,126,664	55,103	891,459
Chicago & Illinois Midland	Sept.	131	277,118	795	286,710	29,823	46,322	18,605	74,812	186,668	65.1	100,042	39,184	36,449	67,590
	9 mos.	131	2,472,887	9,149	2,557,854	272,980	550,801	172,102	702,852	1,857,746	72.6	700,108	464,019	436,819	669,154
Chicago & North Western	Sept.	8,391	5,882,524	1,029,527	7,766,055	1,301,672	1,386,517	182,184	2,895,914	6,111,469	78.7	1,654,586	1,126,226	807,336	420,933
	9 mos.	8,391	44,179,522	8,602,586	58,977,051	9,831,080	13,227,727	1,724,564	25,552,971	53,161,767	90.1	5,815,284	192,458	—1,874,063	—1,021,668
Chicago, Burlington & Quincy	Sept.	8,970	6,879,174	794,649	8,551,114	1,276,256	1,242,461	194,135	2,836,924	5,854,008	68.5	2,697,106	1,959,399	1,583,263	1,278,952
	9 mos.	8,970	53,060,681	6,896,814	67,081,313	8,898,389	11,483,097	2,171,149	24,813,184	50,066,518	74.6	17,014,795	10,559,138	7,018,145	8,699,349
Chicago Great Western	Sept.	1,505	1,353,389	48,402	1,514,141	183,978	215,390	58,918	551,560	1,060,009	70.0	454,132	362,776	170,269	129,803
	9 mos.	1,505	11,124,882	363,515	12,244,907	1,902,023	2,037,741	508,682	5,024,585	9,934,766	80.5	2,410,141	1,599,493	—19,465	432,327
Chicago, Indianapolis & Louisville	Sept.	549	656,766	52,133	776,082	87,318	150,429	27,627	300,808	598,456	77.1	177,626	136,415	33,085	—51,967
	9 mos.	549	5,053,949	423,002	6,033,824	657,656	1,342,246	259,812	2,684,643	5,272,797	87.4	761,027	385,929	—457,369	32,861

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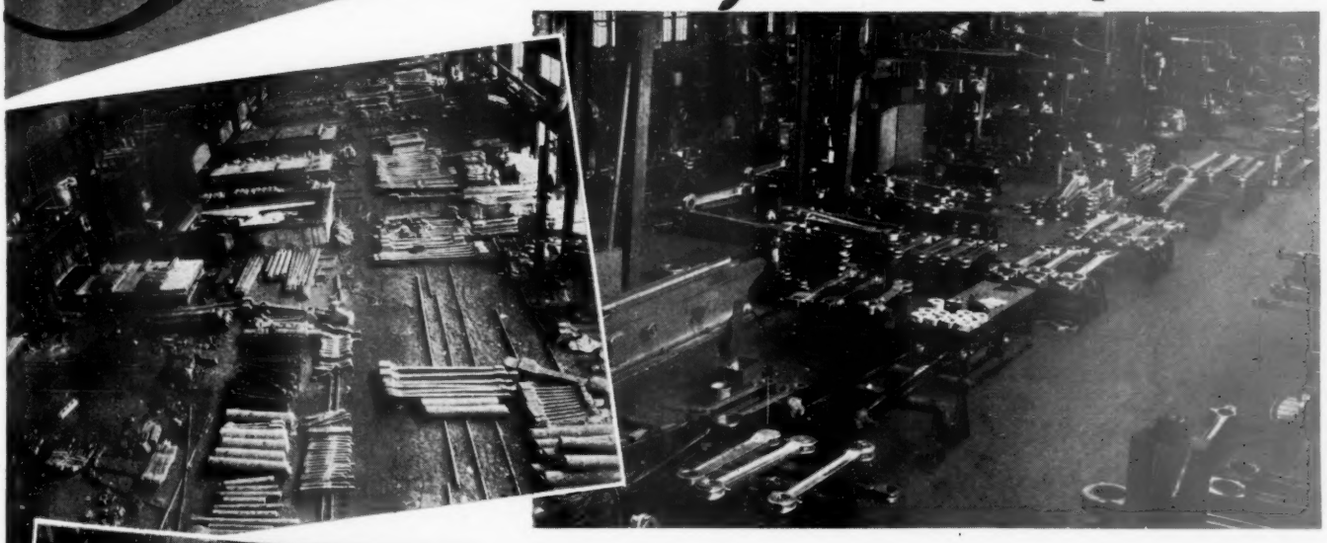
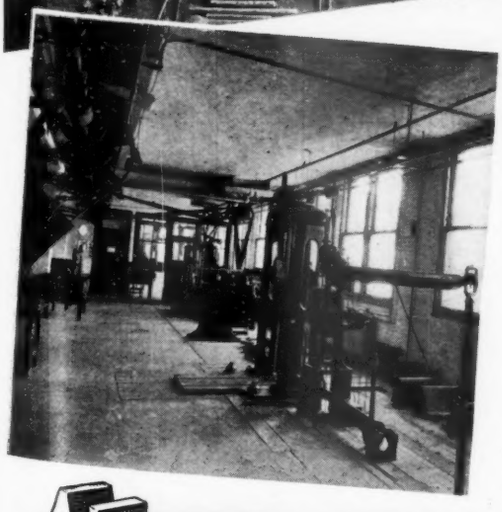
ALCO SERVICE on Forgings

Will help solve vital problems within your own shops . . .





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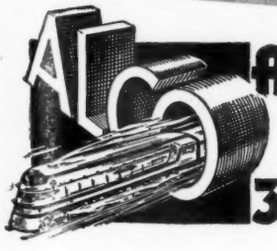
ALCO Service is accurate—prompt—economical. In short it's just good business to buy ALCO Forgings.



AMERICAN LOCOMOTIVE COMPANY

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1938—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1938	1937
Chicago, Milwaukee, St. Paul & Pacific	Sept.	10,949	$7,804,498	$719,477	$9,432,067	$1,753,866	$1,588,747	$229,204	$3,330,001	$7,245,193	76.8	$2,186,874	$1,451,874	$1,009,952	$1,038,917
	9 mos.	10,956	59,491,284	5,840,498	72,206,254	10,977,339	14,138,469	2,064,220	29,307,260	59,785,622	82.8	12,420,632	5,736,632	2,112,580	6,821,697
Chicago, Rock Island & Pacific	Sept.	7,355	5,014,190	660,329	6,200,873	1,038,626	1,205,118	228,994	2,375,362	5,151,589	83.1	1,049,284	619,686	362,789	349,915
	9 mos.	7,431	44,031,101	5,587,767	54,098,927	8,017,148	10,959,074	2,090,719	22,484,155	46,395,209	85.8	7,703,718	3,393,895	432,795	2,853,163
Chicago, Rock Island & Gulf	Sept.	627	231,593	24,009	338,820	86,214	22,809	19,552	131,379	284,414	83.9	54,406	29,517	—44,999	3,730
	9 mos.	627	2,607,142	248,936	3,700,168	620,730	323,415	174,253	1,261,061	2,604,641	70.4	1,095,527	868,356	98,354	377,728
Chicago, St. Paul, Minneapolis & Omaha	Sept.	1,629	1,333,867	136,985	1,577,990	267,992	323,225	38,685	665,063	1,363,655	86.4	214,335	89,372	—26,184	119,345
	9 mos.	1,646	10,367,594	1,112,145	12,331,963	1,745,667	2,271,168	338,385	5,787,978	10,743,393	87.1	1,588,570	584,422	—368,576	—373,014
Clinchfield Railroad	Sept.	308	515,436	3,699	524,799	41,969	88,429	19,379	103,392	268,001	51.1	256,798	209,044	228,024	267,974
	9 mos.	308	4,131,628	34,190	4,214,170	337,320	882,719	169,104	910,743	2,459,549	58.4	1,754,621	1,308,906	1,428,396	2,429,146
Colorado & Southern	Sept.	792	541,676	41,346	638,719	78,194	90,045	20,578	232,256	446,561	69.9	192,158	103,350	69,004	88,784
	9 mos.	796	3,953,684	312,785	4,718,172	488,150	998,204	126,004	1,975,253	3,832,069	81.2	886,103	228,154	38,862	674,978
Fort Worth & Denver City	Sept.	902	422,018	58,961	480,822	60,614	65,638	17,393	187,171	366,942	76.3	113,880	76,374	27,390	44,027
	9 mos.	902	4,498,346	515,674	4,933,460	514,869	819,113	161,642	1,695,117	3,499,502	70.9	1,433,958	1,086,943	660,794	1,489,772
Columbus & Greenville	Sept.	168	95,701	7,696	110,451	16,388	17,347	4,043	38,059	86,156	78.0	24,295	17,702	18,102	6,296
	9 mos.	168	750,393	65,486	871,868	155,060	128,610	38,573	326,346	742,518	85.2	129.350	71,470	73,264	13,976
Delaware & Hudson	Sept.	831	1,564,682	117,393	1,773,685	170,469	305,424	40,757	693,026	1,306,061	73.6	467,624	347,905	320,481	91,610
	9 mos.	831	13,516,934	880,632	15,133,831	1,513,283	2,697,711	391,747	6,434,374	11,983,648	79.2	3,150,183	1,843,107	1,768,974	2,330,476
Delaware, Lackawanna & Western	Sept.	986	2,625,131	557,205	3,663,308	250,957	683,852	110,088	1,765,358	2,940,460	80.3	722,848	287,848	254,315	338,743
	9 moc.	986	23,061,549	5,015,798	32,052,882	2,564,491	5,846,080	1,024,745	16,072,231	26,649,648	83.1	5,403,234	1,542,234	1,192,191	4,498,005
Denver & Rio Grande Western	Sept.	2,563	2,145,899	167,342	2,423,073	382,360	471,037	62,860	862,903	1,872,098	77.3	550,975	349,321	235,574	358,151
	9 mos.	2,568	14,095,907	1,152,282	16,143,140	2,524,349	4,531,046	575,360	6,251,792	14,672,162	90.9	1,470,978	—462,705	—1,111,915	—746,963
Denver & Salt Lake	Sept.	232	279,558	4,252	294,451	20,314	41,586	2,459	72,746	146,712	49.8	147,739	115,028	159,899	94,809
	9 mos.	232	1,285,162	59,155	1,426,308	215,062	330,094	22,337	461,370	1,119,247	78.5	307,061	52,950	469,678	508,323
Detroit & Mackinac	Sept.	242	83,221	2,596	94,372	11,947	12,027	1,045	26,488	53,385	56.6	40,987	37,877	32,178	18,856
	9 mos.	242	519,451	23,880	605,369	110,085	105,706	9,005	225,669	476,842	78.8	128,527	102,887	66,470	76,702
Detroit & Toledo Shore Line	Sept.	50	238,277	.....	239,550	17,568	17,639	8,950	67,360	118,532	49.5	121,018	90,885	41,240	68,602
	9 mos	50	1,740,091	.....	1,744,895	1,712,228	179,999	81,875	539,479	1,037,660	59.5	707,235	505,861	153,619	801,422
Detroit, Toledo & Ironton	Sept.	472	350,993	237	373,718	45,849	89,386	10,979	103,599	267,000	71.4	106,718	63,917	46,227	120,550
	9 mos.	472	3,365,430	1,846	3,516,787	412,513	725,035	100,487	1,005,025	2,401,819	68.3	1,114,968	711,156	644,197	1,816,327
Duluth, Missabe & Iron Range	Sept.	540	1,218,175	2,592	1,454,155	119,803	133,427	4,330	264,247	546,958	37.6	907,197	800,967	800,805	2,180,958
	9 mos.	540	6,087,239	15,854	7,249,002	1,129,647	1,716,843	38,443	1,929,223	5,103,377	70.4	2,145,625	1,526,874	1,520,821	12,972,736
Duluth, Winnipeg & Pacific	Sept.	175	86,090	1,895	91,313	26,670	21,633	2,171	41,448	95,627	104.7	—4,314	—12,132	—23,880	—643
	9 mos.	175	790,502	13,443	830,270	222,560	207,172	20,512	394,282	881,689	106.2	—51,419	—122,204	—242,899	15,585
Elgin, Joliet & Eastern	Sept.	435	891,441	1	1,060,399	104,692	196,872	14,705	414,497	763,659	72.0	296,740	193,163	191,144	382,244
	9 mos.	435	7,007,733	23	7,979,703	925,275	1,885,535	130,676	3,596,388	6,872,667	86.1	1,107,036	223,659	196,537	3,788,762
Erie	Sept.	2,276	5,326,821	388,776	6,164,553	729,260	1,288,099	169,775	2,370,652	4,799,132	77.9	1,365,421	792,540	451,876	982,970
	9 mos.	2,276	42,280,406	3,683,021	49,876,473	5,752,545	10,928,985	1,521,292	21,102,651	41,591,243	83.4	8,285,230	3,212,699	822,366	11,732,983
New Jersey & New York	Sept.	46	15,254	34,773	52,054	5,175	11,421	512	39,239	57,444	110.4	—5,390	—12,604	—24,460	—29,941
	9 mos.	46	128,736	350,263	496,788	47,408	103,849	4,281	375,152	542,128	109.1	—45,340	—110,693	—223,456	—254,760
New York, Susquehanna & Western	Sept.	143	201,888	19,577	231,981	29,559	24,214	3,155	93,949	162,295	70.0	69,686	37,437	2,791	6,522
	9 mos.	143	1,912,921	192,689	2,205,478	233,093	234,379	28,263	911,671	1,527,913	69.3	677,565	387,607	31,360	273,846
Florida East Coast	Sept.	685	278,140	79,716	413,354	99,972	136,739	20,261	184,091	480,808	116.3	—67,454	—144,246	—175,248	—128,521
	9 mos.	685	4,636,078	2,116,353	7,475,634	859,697	1,269,411	199,628	2,472,587	5,298,624	70.9	2,177,010	1,455,690	909,892	689,054
Georgia Railroad	Sept.	329	283,122	11,645	320,966	32,212	47,983	18,802	125,165	237,621	74.0	83,345	68,109	78,827	45,788
	9 mos.	329	2,254,743	109,663	2,567,225	289,419	439,310	167,537	1,155,765	2,178,774	84.9	388,451	248,401	353,620	531,202
Georgia & Florida	Sept.	408	75,361	2,222	81,237	20,396	19,886	9,333	32,523	87,283	107.4	—6,046	—12,541	—11,907	922
	9 mos.	408	7,901,124	17,446	839,230	178,694	163,411	75,159	320,731	786,348	93.7	52,882	—15,712	—32,535	45,771
Grand Trunk Western	Sept.	1,032	1,300,667	75,079	1,494,320	232,068	330,684	41,254	715,386	1,395,413	93.4	98,907	—2,999	—89,140	42,324
	9 mos.	1,032	10,841,340	728,488	12,520,801	1,960,604	2,810,109	392,753	6,425,155	12,272,986	98.0	247,815	—817,749	—1,454,051	2,128,791
Canadian National Lines in New England	Sept.	172	135,366	8,657	156,715	51,064	33,240	2,521	62,845	154,625	98.7	2,090	—13,212	—41,286	—43,180
	9 mos.	172	866,737	68,766	1,015,305	302,880	217,846	24,147	543,956	1,132,191	111.5	—116,886	—254,629	—492,930	—446,437
Great Northern	Sept.	8,072	9,658,958	402,312	10,682,076	1,204,656	1,248,318	175,789	2,653,759	5,541,409	51.9	5,140,667	4,280,057	4,011,511	4,415,416
	9 mos.	8,071	48,960,777	3,548,616	57,030,766	6,480,631	9,885,140	1,711,754	20,152,511	40,596,742	71.2	16,434,024	9,799,108	8,393,978	18,952,090

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1938—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1938	1937
Green Bay & Western	Sept.	234	$113,179	$552	$138,724	$27,008	$17,325	$6,412	$43,309	$98,103	70.7	$40,621	$28,053	$18,638	$65,458
	9 mos.	234	1,077,417	5,025	1,126,149	199,283	146,913	57,317	397,171	838,871	74.4	287,278	185,054	116,066	220,078
Gulf & Ship Island	Sept.	259	70,711	4,574	86,415	22,923	13,058	2,674	49,013	91,661	106.1	—5,246	—22,380	—32,838	—4,197
	9 mos.	259	738,381	67,225	902,559	191,483	135,622	24,265	492,844	888,687	98.5	13,872	—141,533	—228,322	—13,608
Gulf, Mobile & Northern	Sept.	824	538,796	20,581	586,081	80,936	80,443	40,057	153,220	388,749	66.3	197,332	152,332	117,017	85,183
	9 mos.	899	4,428,719	197,550	4,844,129	632,226	716,963	359,094	1,404,775	3,430,985	70.8	1,413,144	976,144	573,986	1,032,053
Illinois Central	Sept.	4,951	6,645,895	730,478	7,941,379	770,560	1,440,381	170,047	2,869,016	5,552,005	69.9	2,389,374	1,724,152	1,590,514	1,936,661
	9 mos.	4,952	53,539,189	6,750,135	65,602,178	6,431,027	12,919,344	1,507,986	25,903,845	49,586,540	75.6	16,015,638	10,028,918	9,033,359	9,223,797
Yazoo & Mississippi Valley	Sept.	1,619	1,302,701	65,895	1,445,309	119,590	171,349	27,674	497,600	859,568	59.5	585,741	448,114	357,620	508,226
	9 mos.	1,619	9,096,541	614,626	10,368,040	959,419	1,408,003	250,618	4,157,417	7,181,528	69.3	3,186,512	1,921,685	1,254,781	2,015,794
Illinois Central System	Sept.	6,570	7,948,596	796,373	9,386,688	890,150	1,611,730	197,721	3,366,616	6,411,573	68.3	2,975,115	2,170,200	1,958,134	2,454,487
	9 mos.	6,571	62,635,730	7,364,761	75,970,218	7,390,446	14,327,347	1,758,604	30,061,262	56,768,068	74.7	19,202,150	11,932,012	10,372,540	11,325,141
Illinois Terminal	Sept.	496	367,108	56,328	462,903	57,584	67,645	15,989	155,900	314,919	68.03	147,984	104,598	85,997	155,174
	9 mos.	496	3,015,865	533,748	3,884,136	462,923	607,281	142,415	1,432,479	2,806,775	72.26	1,077,361	662,948	524,386	1,164,786
Kansas City Southern	Sept.	879	904,990	21,696	1,037,170	110,532	158,144	50,004	296,871	674,971	65.1	362,199	264,199	232,525	348,766
	9 mos.	879	8,617,223	173,775	9,817,237	1,016,361	1,348,793	453,034	2,905,459	6,282,470	64.0	3,534,767	2,612,767	2,175,640	2,457,361
Kansas, Oklahoma & Gulf	Sept.	327	199,611	436	202,388	37,037	11,092	8,543	40,433	103,017	50.9	99,371	77,977	61,160	77,100
	9 mos.	327	1,657,409	4,083	1,691,143	191,939	148,210	80,387	394,263	884,457	52.3	806,686	639,597	491,830	605,713
Lake Superior & Ishpeming	Sept.	156	144,972	65	177,511	27,837	17,472	647	32,279	84,728	47.7	92,783	74,559	72,442	267,615
	9 mos.	156	663,969	565	780,315	240,053	204,810	6,170	236,432	748,270	95.9	32,045	—165,321	—174,016	1,316,711
Lehigh & Hudson River	Sept.	96	124,357	66	125,187	19,315	17,069	3,632	42,505	88,639	70.8	36,548	22,165	11,349	16,246
	9 mos.	96	1,032,987	1,152	1,040,480	99,269	184,539	33,025	382,590	757,345	72.8	283,135	165,594	54,643	158,460
Lehigh & New England	Sept.	205	277,190	.....	280,024	27,773	54,083	6,441	101,717	202,823	72.4	77,201	53,165	64,842	62,504
	9 mos.	208	2,463,627	.....	2,486,224	270,390	540,097	61,928	898,961	1,894,863	76.2	591,361	407,570	476,561	593,449
Lehigh Valley	Sept.	1,287	3,029,705	182,253	3,444,839	208,863	703,235	110,172	1,445,946	2,622,882	76.1	821,957	527,301	367,788	505,274
	9 mos.	1,305	26,172,780	1,630,504	29,731,744	1,699,682	5,933,896	1,006,583	13,468,661	23,339,775	78.5	6,391,969	3,760,275	2,119,333	4,340,218
Louisiana & Arkansas	Sept.	606	549,169	9,096	573,147	67,540	68,884	37,459	138,050	335,156	58.5	237,991	182,569	159,028	114,803
	9 mos.	606	4,270,657	84,670	4,518,826	589,398	636,561	289,700	1,222,119	2,926,251	64.8	1,592,575	1,188,142	985,610	933,233
Louisiana, Arkansas & Texas	Sept.	240	96,666	140	103,528	24,961	8,817	4,537	33,835	76,572	74.0	26,956	22,000	9,266	8,803
	9 mos.	240	815,919	1,639	862,178	226,724	113,973	43,222	344,297	757,568	87.9	104,610	59,164	—49,163	61,866
Louisville & Nashville	Sept.	4,938	6,154,035	473,739	7,074,527	701,543	1,501,901	168,551	2,387,684	5,017,164	70.9	2,057,363	1,493,684	1,628,083	1,523,870
	9 mos.	4,938	48,102,849	4,679,969	56,889,835	6,144,850	12,827,219	1,650,587	21,737,995	44,823,269	78.8	12,066,566	6,972,133	7,138,815	12,296,398
Maine Central	Sept.	995	651,612	94,352	838,804	146,380	132,199	11,889	345,310	673,928	80.3	164,876	90,431	69,836	169,862
	9 mos.	1,000	6,746,717	783,747	8,284,745	1,354,799	1,380,014	103,472	3,233,772	6,396,924	77.2	1,887,821	1,249,846	887,784	1,644,013
Midland Valley	Sept.	352	148,208	Dr. 28	150,450	16,454	12,724	2,286	32,593	69,580	46.2	80,870	69,272	59,326	50,758
	9 mos.	352	985,505	36	1,002,954	130,234	112,327	22,697	265,273	583,642	58.2	419,312	311,686	257,314	357,844
Minneapolis & St. Louis	Sept.	1,523	784,710	11,122	833,246	145,816	120,590	44,429	284,785	635,685	76.3	197,561	145,010	66,554	118,611
	9 mos.	1,524	6,154,535	87,068	6,550,289	1,043,226	1,091,941	393,581	2,514,436	5,368,138	82.0	1,182,151	777,309	364,880	245,936
Minneapolis, St. Paul & Sault Ste. Marie	Sept.	4,297	2,353,669	88,785	2,629,404	415,803	395,556	60,496	931,843	1,894,935	72.1	734,469	522,597	407,978	751,672
	9 mos.	4,298	15,661,351	874,050	18,055,840	2,728,333	3,410,391	548,923	8,221,053	15,742,905	87.2	2,312,935	627,913	—471,687	2,413,087
Duluth, South Shore & Atlantic	Sept.	549	157,696	10,952	187,016	29,365	29,813	5,049	73,404	143,978	77.0	43,038	29,808	28,098	72,391
	9 mos.	549	1,145,822	105,795	1,385,192	303,983	272,761	39,644	675,429	1,333,068	96.2	52,124	—67,747	—105,565	458,169
Spokane International	Sept.	164	68,553	1,271	76,154	12,987	7,893	2,150	21,895	49,524	65.0	26,630	21,932	18,329	23,610
	9 mos.	164	495,746	10,463	560,409	134,167	70,028	19,139	195,544	461,157	82.3	99,252	52,957	30,659	90,097
Mississippi Central	Sept.	150	70,176	1,541	74,000	10,004	7,390	7,309	20,280	49,716	67.2	24,284	16,967	14,081	14,298
	9 mos.	150	554,734	16,176	590,180	101,502	83,652	64,462	186,072	479,044	81.2	111,136	69,485	24,499	36,284
Missouri & Arkansas	Sept.	365	89,474	1,709	98,299	20,740	12,498	4,400	29,407	71,792	73.0	26,507	24,150	13,220	9,168
	9 mos.	365	662,131	14,438	726,568	185,256	98,560	46,177	259,679	629,098	86.6	97,470	62,993	—9,209	19,721
Missouri-Illinois	Sept.	193	89,143	363	91,148	26,000	12,673	2,998	30,099	77,126	84.6	14,022	8,560	548	14,678
	9 mos.	193	742,432	4,299	762,540	172,483	115,707	25,659	273,215	634,096	83.2	128,444	73,265	—813	184,041
Missouri-Kansas-Texas Lines	Sept.	3,294	2,120,152	203,797	2,572,271	314,008	388,043	107,608	896,956	1,830,173	71.2	742,098	495,543	330,217	342,376
	9 mos.	3,294	17,068,665	1,617,094	20,744,132	3,017,097	3,385,958	992,746	8,261,228	16,842,371	81.2	3,901,761	2,146,678	475,933	2,625,881
Missouri Pacific	Sept.	7,173	6,209,776	426,481	7,224,882	1,266,247	1,299,239	238,970	2,526,632	5,575,940	77.2	1,648,942	1,154,176	701,591	877,967
	9 mos.	7,174	50,152,090	3,806,546	59,219,235	9,337,785	11,357,898	2,155,340	22,735,483	47,944,324	81.0	11,274,911	6,828,601	3,306,220	9,114,562

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Over One Million Hours of Substantial Savings —

provide irrefutable evidence that railroads can more than pay for EMC Diesels out of savings realized by displacing other types of switching power. The Diesel's first cost can be normally liquidated within five years.

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TO LICK . . .

High Operating Costs

THERE'S no better proof that Diesels can help railroads "lick" high operating costs than the actual service records covering over a million hours of EMC Diesel Switcher operation. Here are the facts. EMC 600 Hp. and 900 Hp. Diesel Switchers are operating with an average fuel consumption of 4.8 and 7.2 gallons per hour respectively. This is equivalent to an 80 per cent reduction in fuel expense. Further savings are effected by their characteristic high availability for service—the average being 94 per cent with some as high as 98 per cent. Then there's the 50 per cent reduction in maintenance—66 per cent reduction in engine-house expenses—the elimination of water costs—all helping to pile up savings which make EMC Diesels the most profitable motive power investment.

A full realization of the importance and vital need for reliable low cost transportation governs the design, manufacture and servicing of all EMC locomotives and is largely responsible for their excellent operating records.

E CORPORATION
RS LA GRANGE, ILLINOIS, U. S. A.

REVENUES AND EXPENSES OF RAILWAYS

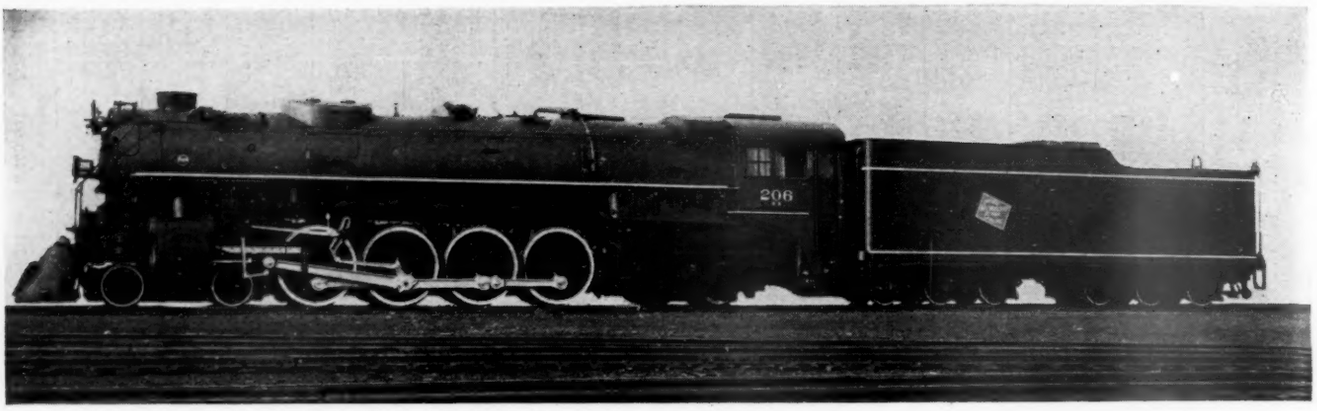
MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1938—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1938	Net railway operating income 1937
Gulf Coast Lines	Sept.	1,759	$688,783	$42,335	$792,771	$185,719	$168,727	$46,548	$314,178	$766,163	96.64	$26,608	—$44,109	—$85,574	$5,343
	9 mos	1,767	9,846,943	369,209	10,736,776	1,715,779	1,679,549	415,193	438,797	7,752,653	72.21	2,984,123	2,327,920	1,432,786	2,732,406
International Great Northern	Sept.	1,155	791,876	86,131	994,782	173,338	192,986	30,923	417,869	874,398	87.9	120,384	61,935	—10,284	63,863
	9 mos.	1,155	7,256,401	732,064	8,937,036	1,413,315	1,758,637	283,557	4,018,215	7,974,254	89.2	962,782	425,235	—411,513	358,931
Mobile & Ohio	Sept.	1,194	918,409	33,820	1,000,614	127,609	188,215	42,081	338,000	737,944	73.7	262,670	201,646	131,179	28,846
	9 mos.	1,194	7,821,578	259,492	8,514,138	1,047,553	1,517,388	381,408	3,259,724	6,599,676	77.5	1,914,462	1,369,157	694,907	882,439
Monongahela	Sept.	172	305,775	603	308,021	19,228	24,050	604	63,048	109,817	35.7	198,204	167,324	98,823	120,938
	9 mos.	172	2,319,050	6,705	2,340,343	183,597	179,544	4,490	555,865	952,206	40.7	1,388,137	1,113,541	508,064	951,600
Montour	Sept.	56	175,377	.....	176,385	13,121	46,003	950	35,991	102,555	58.1	73,830	46,328	78,477	104,850
	9 mos	56	1,136,991	.....	1,150,062	96,819	340,420	8,763	289,197	803,144	69.8	346,918	178,725	420,598	855,462
Nashville, Chattanooga & St. Louis	Sept.	1,116	980,360	78,774	1,189,913	105,669	199,991	61,905	447,192	867,340	72.9	322,573	247,568	233,018	33,564
	9 mos	1,116	8,130,023	788,970	9,991,053	1,053,564	1,744,699	580,330	4,081,565	7,968,548	79.8	2,022,505	1,347,446	1,135,544	963,214
Nevada Northern	Sept.	166	47,325	750	52,890	8,983	3,007	1,310	10,030	28,071	53.1	24,819	14,054	16,942	21,448
	9 mos.	166	342,144	8,935	395,422	74,063	28,711	11,059	87,707	244,922	61.9	150,500	64,544	97,590	185,200
New York Central	Sept.	11,077	17,564,624	51,189,922	25,801,585	3,022,579	5,102,073	509,180	9,988,470	19,874,575	77.0	5,927,010	3,289,004	2,193,200	3,165,634
	9 mos.	11,078	142,628,939	44,546,833	212,710,312	23,347,946	42,240,845	4,958,445	90,782,619	172,619,366	81.2	40,090,946	14,668,373	5,580,242	32,155,055
Pittsburgh & Lake Erie	Sept.	233	1,334,134	38,081	1,420,667	125,077	392,220	25,856	446,442	1,069,700	75.3	350,967	186,998	349,411	576,050
	9 mos.	233	8,870,870	385,864	9,650,353	960,112	3,233,264	250,381	3,883,291	9,043,736	93.7	606,617	—498,294	1,031,709	3,988,212
New York, Chicago & St. Louis	Sept.	1,704	3,052,705	75,994	3,237,306	338,346	477,369	115,254	1,122,319	2,177,626	67.3	1,059,680	869,979	614,882	659,720
	9 mos.	1,704	24,505,745	668,369	26,102,102	2,761,003	4,280,067	1,072,748	10,114,357	19,305,257	74.0	6,796,845	5,029,364	2,782,307	6,498,016
New York, New Haven & Hartford	Sept.	2,025	2,760,051	2,156,289	5,593,666	2,362,604	1,033,965	99,474	2,519,511	6,395,951	114.3	—802,285	—1,354,785	—1,929,242	305,913
	9 mos.	2,023	27,202,934	19,478,464	52,408,285	8,919,433	9,448,084	957,747	22,578,971	45,190,191	86.2	7,218,094	2,635,594	—2,145,522	4,226,141
New York Connecting	Sept.	21	202,132	.....	213,827	24,808	7,558	.....	25,942	59,659	27.9	154,168	112,302	79,514	38,086
	9 mos.	21	1,737,530	.....	1,809,227	190,207	92,752	.....	264,590	559,142	30.9	1,250,085	887,243	621,880	986,774
New York, Ontario & Western	Sept.	576	437,374	54,825	532,791	67,126	140,462	13,757	257,930	502,380	94.3	30,411	—23,495	—63,659	—62,551
	9 mos.	576	3,999,520	369,346	4,780,943	645,441	1,176,383	122,194	2,360,231	4,529,626	94.7	251,317	—229,588	—524,590	—71,075
Norfolk & Western	Sept.	2,200	7,233,421	177,117	7,603,464	649,010	1,327,321	130,550	1,674,300	3,959,259	52.1	3,644,205	2,576,944	2,813,252	2,856,155
	9 mos.	2,200	49,905,547	1,442,369	52,992,140	5,991,155	11,355,171	1,233,325	14,027,701	34,304,510	64.7	18,687,630	10,914,425	12,377,577	24,476,355
Norfolk Southern	Sept.	805	340,348	4,495	359,641	65,223	51,977	23,874	132,553	295,348	82.1	64,293	29,854	17,283	14,012
	9 mos.	808	3,165,824	43,662	3,343,545	572,656	467,797	214,513	1,225,159	2,690,219	80.5	653,326	343,857	218,389	359,026
Northern Pacific	Sept.	6,721	5,159,180	373,295	6,028,148	712,320	966,825	153,072	1,914,319	4,037,514	67.	1,990,634	1,495,252	1,697,119	1,932,641
	9 mos.	6,721	34,352,679	3,216,622	41,504,418	6,109,201	8,732,706	1,579,870	16,559,689	35,548,464	85.7	5,955,954	760,290	3,156,200	8,059,284
Northwestern Pacific	Sept.	352	217,674	58,591	301,907	65,586	46,849	3,885	160,489	288,969	95.7	12,938	—6,422	—19,291	7,266
	9 mos.	352	1,555,339	477,972	2,252,119	677,757	443,329	33,317.	1,468,624	2,732,699	121.3	—480,580	—653,158	—764,294	2,845
Oklahoma City-Ada-Atoka	Sept.	132	40,034	295	42,297	9,890	1,857	679	16,492	31,001	73.3	11,296	7,441	2,438	9,185
	9 mos.	132	311,802	3,383	331,559	79,003	20,271	7,599	104,694	229,881	69.3	101,678	71,607	23,737	55,650
Pennsylvania	Sept.	10,306	23,331,520	5,634,194	32,047,256	2,996,505	5,277,076	617,694	11,161,905	21,203,489	66.2	10,843,767	7,244,669	6,512,418	7,249,596
	9 mos.	10,306	185,480,345	48,671,970	259,649,926	24,513,618	46,508,501	5,916,843	99,711,943	187,899,851	72.4	71,750,075	43,749,632	36,767,983	58,739,739
Long Island	Sept.	394	542,977	1,407,446	2,046,348	193,573	372,277	8,932	961,618	1,567,128	76.6	479,220	91,337	—112,924	—106,861
	9 mos.	394	4,437,549	12,282,829	17,511,926	1,441,755	2,831,534	72,746	8,570,859	13,217,033	75.5	4,294,893	1,481,071	11,835	2,738
Pennsylvania-Reading Seashore Lines	Sept.	412	247,354	268,457	541,115	72,199	70,099	7,180	309,409	475,560	87.9	65,555	—37,290	—131,445	—151,734
	9 mos.	412	1,876,350	2,137,896	4,206,605	656,289	681,391	67,811	2,635,195	4,193,113	99.7	13,492	—830,041	—1,565,159	—1,181,578
Pere Marquette	Sept.	2,115	2,114,790	68,062	2,330,067	311,554	442,940	61,047	825,899	1,753,010	75.2	577,057	420,733	319,079	301,441
	9 mos.	2,115	15,849,443	771,378	17,723,303	2,715,950	4,154,683	568,537	7,460,218	15,781,995	89.0	1,941,308	584,944	—397,004	3,626,286
Pittsburg & Shawmut	Sept.	101	36,978	.....	37,207	12,096	13,221	1,438	13,385	43,237	116.2	—6,030	—7,515	—8,611	8,156
	9 mos.	101	334,157	947	338,786	91,286	130,550	14,227	123,566	397,218	117.2	—58,432	—71,564	—65,016	25,043
Pittsburgh & West Virginia	Sept.	136	256,739	.....	273,756	54,607	56,338	14,547	60,054	206,148	75.3	67,608	44,081	66,160	82,698
	9 mos.	136	1,974,476	.....	2,128,023	365,421	487,115	143,509	526,957	1,717,836	80.7	410,187	247,224	380,189	934,383
Pittsburg, Shawmut & Northern	Sept.	190	73,625	.....	73,615	13,401	10,866	1,132	24,804	55,434	75.3	18,181	13,382	7,299	—5,796
	9 mos.	190	614,411	1	620,076	116,292	104,240	9,515	232,937	515,948	83.2	104,128	59,956	—7,158	—26,313
Reading	Sept.	1,450	3,556,091	250,115	4,001,157	340,320	667,378	75,241	1,640,011	2,867,636	71.7	1,133,521	990,929	985,856	960,625
	9 mos.	1,451	30,869,799	2,369,097	34,879,347	2,319,865	6,744,777	681,398	15,284,410	26,372,313	75.6	8,507,034	6,190,465	6,435,929	10,781,399
Richmond, Fredericksburg & Potomac	Sept.	118	305,169	135,212	526,829	54,355	113,905	9,220	208,053	418,819	79.5	108,010	54,223	47,571	42,212
	9 mos.	118	3,206,215	1,716,374	5,775,312	582,148	1,157,518	85,231	2,399,243	4,614,993	79.9	1,160,319	698,193	353,426	859,453

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1938—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: 1938	1937
Rutland	Sept.	407	$154,431	$34,931	$245,037	$55,238	$49,171	$9,247	$127,544	$252,418	103.0	—$7,381	—$35,744	—$37,902	$1,168
	9 mos.	407	1,388,313	267,302	2,160,999	337,706	519,679	94,148	1,256,142	2,338,207	108.2	—177,208	—435,595	—447,659	50,003
St. Louis-San Francisco	Sept.	4,884	3,390,068	279,072	3,993,897	602,963	934,317	114,735	1,415,569	3,234,510	81.0	759,387	426,550	461,935	447,702
	9 mos.	4,885	26,557,862	2,467,228	31,745,127	5,237,290	7,926,333	1,026,523	12,835,084	28,653,456	90.3	3,091,671	80,415	—26,610	4,724,666
St. Louis, San Francisco & Texas	Sept.	266	104,868	2,040	112,456	23,230	14,085	7,761	49,478	100,940	89.8	11,516	3,304	—22,548	—39,695
	9 mos.	266	1,209,137	6,491	1,267,519	216,094	136,700	70,827	507,338	989,950	78.1	277,569	204,117	—68,140	—126,152
St. Louis Southwestern Lines	Sept.	1,706	1,486,165	28,262	1,583,845	229,530	238,848	82,228	505,363	1,129,372	71.3	454,473	347,954	245,643	179,792
	9 mos.	1,706	12,635,243	219,743	13,419,165	1,949,993	1,938,924	730,303	4,830,196	10,134,852	75.5	3,284,313	2,337,506	1,047,825	1,634,771
Seaboard Air Line	Sept.	4,318	2,258,089	266,042	2,879,230	550,540	650,420	147,202	1,168,076	2,683,478	93.2	195,752	—29,248	—38,658	57,218
	9 mos.	4,318	22,530,188	3,838,210	29,336,272	4,436,270	6,108,046	1,455,525	11,629,949	25,319,916	86.3	4,016,356	1,481,356	716,559	3,196,402
Southern Railway	Sept.	6,602	6,737,208	763,813	8,234,848	910,815	1,230,633	142,331	2,704,289	5,284,869	64.2	2,949,979	2,330,838	1,983,149	1,189,566
	9 mos.	6,606	52,497,552	6,548,484	64,433,874	8,239,644	11,463,729	1,361,034	23,825,439	47,652,547	74.0	16,781,327	11,156,771	8,022,995	12,690,904
Alabama Great Southern	Sept.	315	552,743	51,415	648,498	88,197	124,795	14,326	175,955	425,149	65.6	223,349	157,064	176,547	95,460
	9 mos.	315	4,043,521	465,872	4,854,011	782,178	1,170,533	112,310	1,543,031	3,811,798	78.5	1,042,213	552,989	867,535	954,022
Cincinnati, New Orleans & Texas Pacific	Sept.	337	1,151,823	85,728	1,332,690	168,838	273,095	28,322	324,071	842,880	63.2	489,810	336,286	379,945	335,730
	9 mos.	337	9,473,720	872,088	11,029,219	1,539,854	2,370,536	248,135	2,933,969	7,555,818	68.5	3,473,401	2,352,700	2,685,445	3,808,652
Georgia Southern & Florida	Sept.	398	131,488	21,437	183,595	31,007	32,143	1,698	69,305	139,419	75.9	44,176	27,268	26,512	—4,294
	9 mos.	398	957,818	367,337	1,506,359	283,903	313,988	16,450	683,218	1,363,242	90.5	143,117	—10,857	—32,891	183,863
New Orleans & Northeastern	Sept.	204	236,179	20,295	273,627	33,548	35,088	6,960	79,147	166,102	60.7	107,525	77,684	53,428	41,537
	9 mos.	204	1,941,706	185,347	2,270,752	315,850	323,394	57,179	710,221	1,515,966	66.8	754,786	480,858	261,967	465,959
Northern Alabama	Sept.	100	44,176	1,124	47,090	6,916	1,327	682	14,680	25,411	54.0	21,679	16,094	9,424	12,873
	9 mos.	100	367,672	10,492	392,996	85,216	11,859	9,340	139,401	264,621	67.3	128,375	76,992	—15,063	917,042
Southern Pacific	Sept.	8,707	10,934,446	1,923,187	14,111,900	1,362,946	2,152,285	332,307	5,273,419	9,995,850	70.8	4,116,050	2,943,590	2,221,578	2,334,606
	9 mos.	8,713	83,824,872	16,611,358	110,681,229	13,030,590	19,634,209	3,099,383	45,229,474	88,292,433	79.8	22,388,796	11,587,837	5,239,145	14,780,759
Southern Pacific Steamship Lines	Sept.	....	434,236	29,222	487,084	13,718	87,298	16,475	336,498	470,117	96.5	16,967	3,114	2,877	—56,568
	9 mos.	....	4,419,960	235,497	4,877,402	125,803	857,313	155,881	3,504,171	4,791,622	98.2	85,780	—51,089	—53,065	—23,441
Texas & New Orleans	Sept.	4,416	2,927,501	282,938	3,512,901	514,648	579,608	117,080	1,263,621	2,687,970	76.5	824,931	536,001	340,670	428,889
	9 mos.	4,418	25,580,392	2,557,441	30,712,103	4,688,950	5,553,253	1,094,719	11,267,144	24,544,306	79.9	6,167,797	3,422,665	1,674,025	3,627,357
Spokane, Portland & Seattle	Sept.	947	688,433	46,915	788,873	134,883	94,021	9,869	255,185	524,679	66.5	264,194	186,056	126,249	87,076
	9 mos.	947	5,225,123	382,112	6,031,733	1,035,937	799,226	94,821	2,219,431	4,416,675	73.2	1,615,058	945,482	540,624	1,229,954
Tennessee Central	Sept.	287	209,746	4,575	226,704	31,441	28,724	6,301	69,328	145,243	64.1	81,461	69,479	50,401	47,047
	9 mos.	287	1,498,846	39,045	1,625,565	268,785	241,757	54,106	595,205	1,249,678	76.9	375,887	268,832	129,884	263,839
Texas & Pacific	Sept.	1,937	1,890,481	201,167	2,285,164	240,948	423,315	70,850	680,211	1,523,864	66.7	761,300	589,508	519,618	390,824
	9 mos.	1,937	15,756,885	1,847,316	19,206,402	2,000,158	3,404,437	651,622	6,433,724	13,551,052	70.6	5,655,350	4,302,137	3,227,280	4,387,144
Texas Mexican	Sept.	162	49,294	305	61,288	7,997	12,164	2,769	32,107	60,477	98.7	811	—5,671	—8,866	4,168
	9 mos.	162	637,607	4,060	751,626	117,519	124,512	27,598	329,549	652,524	86.8	99,102	57,826	19,072	227,671
Toledo, Peoria & Western	Sept.	239	169,453	Dr. 4	172,475	38,342	13,611	15,973	40,191	117,571	68.2	54,904	32,126	14,582	16,212
	9 mos.	239	1,555,823	20	1,580,517	385,141	118,603	146,505	370,663	1,116,176	70.6	464,341	331,217	195,807	199,294
Union Pacific System	Sept.	9,903	12,276,043	1,695,474	15,236,193	2,394,332	2,367,714	338,789	4,573,569	10,508,565	69.0	4,727,628	3,461,445	2,395,289	3,548,959
	9 mos.	9,909	83,168,841	12,759,224	105,525,887	12,440,627	18,896,052	3,110,868	36,324,100	77,208,584	73.2	28,317,303	17,125,586	10,791,473	13,534,962
Utah	Sept.	111	63,685	.....	64,063	12,142	22,969	367	16,849	55,892	87.2	8,171	—4,497	—6,522	31,392
	9 mos.	111	408,839	.....	410,012	91,821	158,710	2,903	126,449	413,208	100.8	—3,196	—70,659	—81,908	63,055
Virginian	Sept.	638	1,568,439	3,549	1,628,427	149,418	346,301	22,739	256,953	808,444	49.6	819,983	609,983	679,331	828,587
	9 mos.	627	13,235,648	31,434	13,750,598	1,303,256	3,141,641	203,099	2,282,346	7,182,839	52.2	6,567,759	4,852,759	5,368,010	6,781,251
Wabash	Sept.	2,434	2,964,989	208,861	3,432,180	421,982	586,449	153,039	1,350,986	2,665,494	77.7	766,686	540,026	182,790	281,100
	9 mos.	2,434	25,193,520	1,780,346	29,072,734	3,703,626	5,116,191	1,338,267	12,457,343	23,999,283	82.5	5,073,451	3,198,267	8,624	3,341,821
Ann Arbor	Sept.	294	297,829	3,037	312,988	29,934	61,108	13,077	128,010	243,858	77.9	69,130	49,111	35,726	20,142
	9 mos.	294	2,415,385	27,663	2,534,222	254,447	562,105	117,352	1,157,167	2,201,715	86.9	332,507	153,164	29,171	250,227
Western Maryland	Sept.	879	1,156,607	7,964	1,195,683	127,905	224,594	36,553	323,192	744,884	62.3	450,799	389,178	396,208	407,530
	9 mos.	879	9,360,005	81,699	9,774,690	1,153,705	2,190,927	328,637	2,834,020	6,851,883	70.1	2,922,807	2,273,215	2,323,233	3,681,997
Western Pacific	Sept.	1,208	1,457,880	33,855	1,520,933	367,202	220,650	54,230	546,031	1,223,945	80.5	296,988	204,736	121,792	142,421
	9 mos.	1,208	9,549,631	272,842	10,100,475	3,041,338	2,057,126	521,983	4,476,177	10,536,807	104.3	—436,332	—1,248,176	—1,843,798	—811,229
Wheeling & Lake Erie	Sept.	508	1,023,544	Dr. 5	1,080,190	106,163	222,561	37,055	348,186	744,530	68.9	335,660	205,805	262,757	396,638
	9 mos.	508	7,298,502	11,416	7,684,675	740,125	1,673,443	302,402	2,804,490	5,768,225	75.1	1,916,450	972,459	1,340,601	3,767,695



CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC

4-8-4 type

HEAVY DUTY POWER

Thirty 4-8-4 type freight and heavy passenger locomotives have recently been delivered to the Chicago, Milwaukee, St. Paul & Pacific by the Baldwin Locomotive Works. » » » In passenger service these locomotives will handle 18 cars during the peak of traffic. » » » With a tractive effort of 70,800 lbs. these locomotives have a combined engine and tender weight of 887,450 lbs. The boiler carries 285 lbs. pressure, is 92 inches in diameter and has a combined heating surface of 7,845 square feet. These locomotives are fired by Standard Stokers.

THE STANDARD STOKER COMPANY, INC.

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